

Development of Standard Specification and Standard Details for Local Highway Maintenance

Appendix 2 – Standard Details

Version 1 – November 2012



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REVISION SCHEDULE

Rev	Date	Details	Prepared by	Reviewed by	Approved by
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This document is released as an Interim Document to allow its use by local highway authorities as early enablers in the development of their term service contracts, feeding into the ongoing development of the Highways Maintenance Efficiency Programme Standard Term Maintenance Contract and Document Compiler work package.

If you wish to make a comment or contribute to the development of the document, please send an email to

highwayefficiency@DfT.gsi.gov.uk

with the header 'Feedback on the Standard Specification and Standard Details'.

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FOREWORD

ABOUT THE HIGHWAYS MAINTENANCE EFFICIENCY PROGRAMME

The Highways Maintenance Efficiency Programme (HMEP) is a sector-led transformation initiative that will maximise returns from investment and deliver efficiencies in highway maintenance services. The Programme started in April 2011 with sponsorship from the Department for Transport and is intended to run until 2018.

The Programme is offering local highway practitioners benefits from different ways of working. The vision is that over time, those involved in highways maintenance delivery, the local authorities as clients and their service providers, be they from the private or public sector will adopt an ambitious and longer-term approach to enable them to:

- Continuously find new and improved ways of delivering services to highway users and managing highways assets.
- Make use of collaborative partnerships to improve processes and outcomes.

Deliver a sustainable balance between meeting the needs of highways users, improving quality and minimising costs.

The overall programme has been developed by the Programme Board through key personnel who support HMEP's development. This will ensure that:

- The Programme is truly being driven by what the whole sector needs and wants ('by the sector for the sector').
- The solutions identified by the sector are relevant, realistic, repeatable, scalable and sustainable.
- HMEP is benefits-led, driving true transformation of the sector with tangible efficiency gains and a lasting legacy.

As a transformation initiative HMEP is targeting the ways local highway authorities conduct their business. It invites the sector to adopt new ways of working to deliver efficiency savings through:

- **Collaboration & Change** - looking at how alliances between authorities, and clients and their providers, can be formed to deliver efficiencies in the delivery of highway maintenance services. Other projects are looking at changing business processes; for instance by applying Lean thinking to the processes behind service delivery and how services or processes can be streamlined to realise efficiencies.

- **Procurement, Contracting and Standardisation** – advising on the routes to procurement enabling authorities to determine how their current service is aligned to current thinking and which is the best procurement option to realise their future service ambitions. It also provides the tools so that efficiencies can arise through the use of, for instance, a standardised form of contract and highway maintenance specification which are better aligned to the activities that local highway authorities undertake.
- **Asset Management** – by providing advice to the sector in the form of updated asset management guidance; for both a simplistic and, where appropriate, more complex lifecycle planning tool to determine whole life asset costs, thus moving away from a reactive to a longer-term approach for maintaining highways assets. To provide training specifically targeted at practitioners to help them move towards an asset management approach and to adopt the new HMEP guidance and tools.
- **Benchmarking & Performance** – collecting, sharing and comparing performance data on Customer/Quality/Cost to help both understanding to show how effective local highway authorities are in delivering Value for Money services and drive targeted efficiencies.

Products and tools are being developed for each of these themes and are being designed to be interdependent, but complementary, so that authorities can maximise their returns from their investments.

ABOUT THIS TOOLKIT

The HMEP survey of the sector of October 2011 indicated that 97% of those local highway authorities responding wanted a specification that was more aligned to the maintenance activities that they undertake, as opposed to the current Specification for Highway Works which is aimed at new road construction. In response to this, HMEP has prepared this guidance for the development of a Standard Specification and Standard Details for Local Highway Maintenance.

This is the first release of the document and is aimed at the areas where local highway authorities incur the greatest maintenance expenditure; namely in highway drainage, kerbing and footway works, bituminous surfacing, structural concrete, structural steelwork and winter maintenance activities. The guidance is based on documents returned as part of each authority's response to the survey. The content of this guidance draws on the good practice within specifications developed for recent tenders and for contracts that are about to be procured, making the content as current as possible.

This guidance represents the beginning of a review of the full range of services local highway authorities undertake. A new product is currently in development that will expand on the scope of the guidance to all series of the specification and incorporate outcome specifications. This is programmed for release towards the end of 2013. However, the sector is encouraged to start to move towards a standardised approach by using this document.

A consistent approach will help to align the documents to the range of services that local highway authorities undertake with associated pricing schedules, method of measurement and bill item generation. This product will be presented with the HMEP suite of procurement documents (IfT, OJEU, PQQ and Form of Contract) within a document compiler platform to enable local highway authorities to procure Term Service Contracts as well as individual projects while moving towards an e-tendering solution.

Significant savings are expected through adopting a standard specification across the sector. The many bespoke forms that currently exist will be rationalised to a single common form. The HMEP version will also be maintained centrally and be updated regularly, saving the resource commitment within each authority to update and maintain their own standard forms. There is also the potential for wider savings throughout the supply chain as all become familiar with the new specification and move away from bespoke forms towards a consistent approach. Authorities are therefore encouraged to start using this guidance now to move towards the aims and ambitions of the wider programme for the sector.

Authorities should resist the temptation to bespoke the specification to suit their particular local needs. If you consider that certain aspects need to be included, please relay the information with the rationale for its inclusion back to the Programme for consideration. If deemed appropriate, it will be included within the next update.

ABOUT THIS DOCUMENT

This document forms Appendix 2 to the Guidance for the Development of Standard Specification and Standard Details for Local Highway Maintenance Contracts, and contains the Standard Detail Drawings developed as part of the Highway Maintenance Efficiency Programme.

Users should refer to Appendix 1 for references to the Specification and Notes for Guidance.

COMMENTS AND FEEDBACK

The HMEP Programme Board would welcome any comments and feedback on this document so that the final product may be reviewed, improved and refined to give the sector the best advice possible. If you wish to make a comment, please email them to highwaysefficiency@DfT.gsi.gov.uk with the header 'Feedback on the HMEP Standard Specification and Standard Details'.

INTRODUCTION

The Guidance for the Development of Standard Specification and Standard Details for local highway maintenance Contracts has been prepared on behalf of the Highway Maintenance Efficiency Programme to provide a series of standard specification items and drawings for Local Highway Authorities maintenance works.

It has been recognised that the Department for Transport published Manual of Contract Documents for Highways Works was originally developed for the specification of new works on the motorway and trunk road systems, and that it has limitations in its use when specifying maintenance materials for Local Highway Authorities.

Many local highway authorities have, either individually or collaboratively, developed their own variations to the Manual of Contract Documents for Highways Works, illustrating the need for specific items to cover the works undertaken on non-motorway or trunk road routes.

The Highway Maintenance Efficiency Programme (HMEP) has collated these variations, drawn the common themes from the information provided by local authorities, and identified examples of good practice. Material specifications have been standardised where possible to enable cost savings and increased confidence in material quality to be achieved through a consolidation or rationalisation of the available information.

DOCUMENT RELEVANCE

During the development of this document it has been recognised that, to bring maximum benefit to users, additional work is required to expand the current HMEP specification to cover all works undertaken by local highway authorities. In addition it is noted that the DfT is in the process of updating the Specification for Highways Works. The nature and extent of this update is not known at present. As a result this document will require updating.

This work will contribute to a new HMEP product comprising a Standard Term Maintenance Contract and Document Compiler. The scope of this package is to provide Term Maintenance Contract, Method of Measurement and Bill of Quantities for highway maintenance services associated with two other HMEP products (the Form of Contract and Specification).

This document is therefore released as an Interim Document to allow its use by local highway authorities as early enablers in the development of their term service contracts, feeding into the ongoing development of the Brief 13 work package.

Following completion of the Highway Maintenance Efficiency Programme Standard Term Maintenance Contract and Document Compiler this document will be revised to take into account feedback over the development period.

DOCUMENT LAYOUT

The Guidance for the Development of Standard Specification and Standard Details for Local Highway Maintenance Contracts has been developed in three sections:

Section 1: Guidance for the Development of Standard Specification and Standard Details for Local Highway Maintenance Contracts

The main document provides information on the background to the HMEP work undertaken to date, and on the development of this product.

Section 2: Appendix 1 - Specification and Notes For Guidance

The Standard Specification document has been sub-divided to mirror the relevant Specification for Highways Works series. The work has been further divided within each series into:

Specification - The HMEP guidance provides two forms of specification clauses. These are numbered as HMEP Cl. Xxx, and may be used as Substitute Clauses, SR, replacing the current Specification for Highways Works Clause, or as an Additional Clause AR to the existing Specification for Highways Works. Where additional Notes for Guidance for the Specification clause have been provided the full specification clause has been supplied.

Notes for Guidance – Where applicable notes for guidance for the alternate clause have been produced. These are highlighted in an orange box (shown below) and follow the relevant clause. These are numbered as HMEP NG Cl. Xxx



Additional Guidance – Where information has been obtained that can be used to aid decisions on the adoption of specification items, or where additional guidance is available from other sources, additional guidance notes have been included.

These are highlighted in an orange box (as above), and are numbered as HMEP AG xxx.xx.

Section 3: Appendix 2 - Standard Details (This Appendix)

Standard detail drawings have been prepared to supplement those provided in the Manual of Contract Documents for Highways Works Highways Construction Details and to expand on the HMEP Specification above. These provide additional standard details for local highways works on non-motorway or non-trunk road systems. They include additional drainage details for minor roads and footway construction details.

The standard details drawings are numbered HMEP – XXX – YYY, where XXX is the Specification for Highways Works series number, and YYY is the sequential numbering for the drawings. These are available separately from this document for download from

the HMEP website as .pdf and .dwg files. These drawings may be referred to either in their original form in this document, or imported into specific contract documents.

In the event that the drawings are imported into contract documents the drawings should be renumbered as contract specific drawings in Appendix 0/4 of the new contract.

STANDARD DETAIL DRAWINGS

The intention of this document is to provide a set of standard details that can be used as a core document in specifying highway maintenance services for local highway networks, complementing local details and methods of work.

When referring to a HMEP standard detail in your documentation use the following description:

“in accordance with HMEP Standard Detail XXX.YYY”.

This means that the reference in your document will be taken from the HMEP Standard Detail Drawings, which will ensure that it is up to date with any revisions.

Alternatively, consent is given for you to copy the standard detail drawing from this document into your authority’s document. If you wish to copy items within this document this is acceptable, but will mean that your standard detail drawing is only as up to date as the version of the document that you hold. References to the HMEP standard detail number should be removed from the drawing and replaced with your standard detail number taken from Appendix 0/4 in your document.

Where the absence of standard detail drawings in the existing Manual of Contract Documents for Highway Works Volume 3 - Highway Construction Details have been noted (such as footway construction) additional detail drawings have been created from the information provided by the contributing local authorities. These details have been produced to support the standard specification and notes for guidance, and may be brought into the contract documentation of potential users by reference to the entire document or individual drawing numbers in Appendix 0/4 to the Specification.

The Highway Construction Details (HCD) is published as Volume 3 of the Manual of Contract Documents for Highway Works and contains standard drawings for use in the construction, improvement and maintenance of local authority roads and footways.

The DfT numbers, titles and dates of the individual drawings, or parts of drawings, included in the contract should be listed in Appendix 0/4 to the Specification.

The following apply to each drawing unless otherwise stated thereon:

1. Specification for Highways Works means the Specification for Highway Works published by The Stationery Office as Volume 1 of the Manual of Contract Documents for Highway Works.
2. HMEP means the Highways Maintenance Efficiency Programme Standardised Specification and Standard Details for Local Highway Authorities
3. Reference to a Clause prefaced by Cl. is a reference to a Clause of the Specification for Highway Works.

4. Reference to a Clause prefaced by HMEP Cl. is a reference to a Clause of the Highways Maintenance Efficiency Programme Standard Specification.
5. Reference to a Numbered Appendix (e.g. Appendix 3/1) is a reference to a Numbered Appendix to the contract Specification.

The relevant publication date of each Clause is to be determined from the Schedule of Pages and Relevant Publication Dates in the Specification.

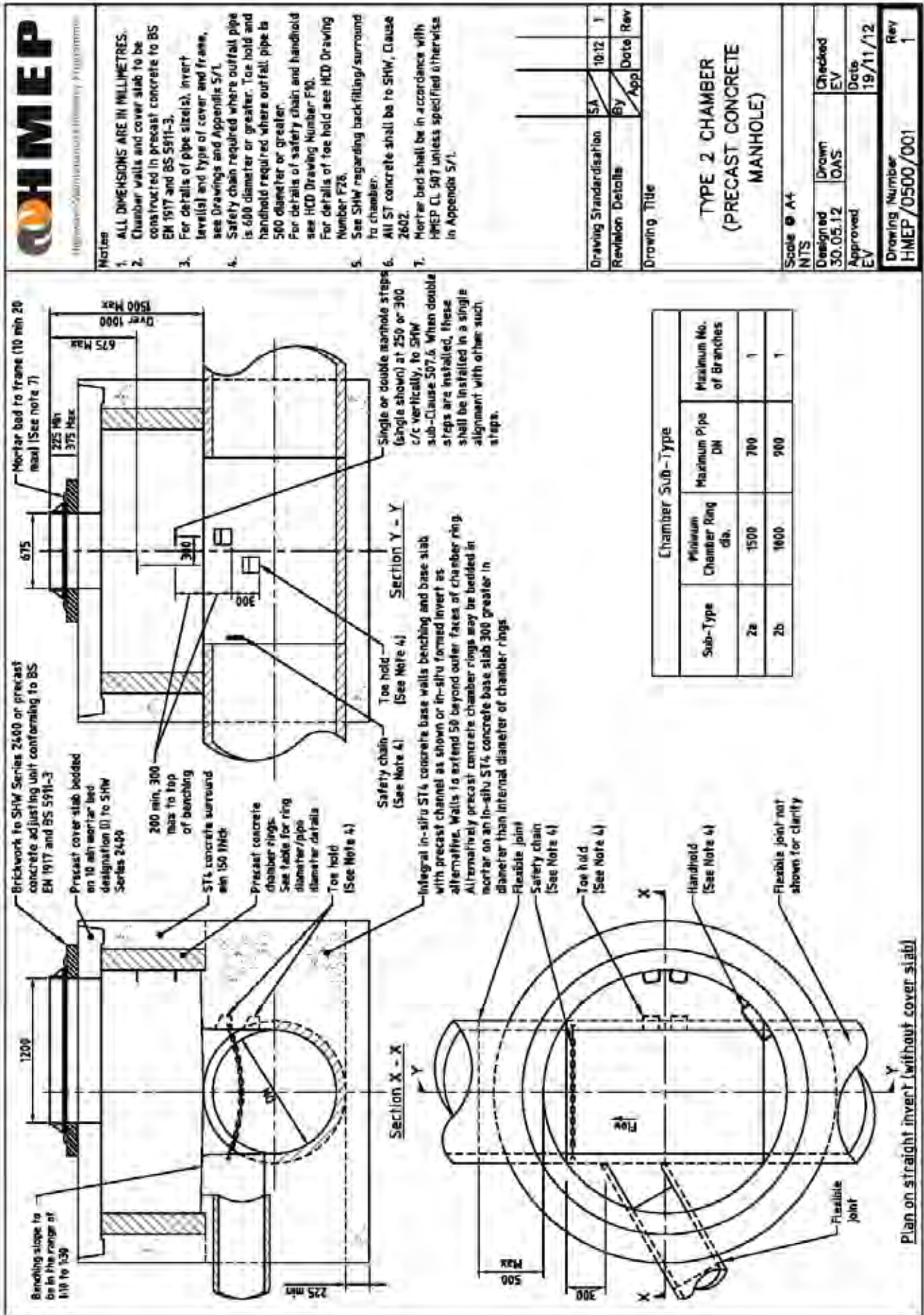
The relevant publication date of each British Standard (BS) and other reference document referred to in the HCD is to be determined in accordance with Clause 004 of the Specification.

LIST OF DRAWINGS

Drawing No.	Drawing Title	Date
Series 500 – Drainage and Service Ducts		
HMEP/0500/001	Type 2 Chamber (Precast Concrete Manhole)	11/12
HMEP/0500/002	Type 3 Chamber (Precast Concrete Manhole)	11/12
HMEP/0500/003	Type 4 Chamber (Precast Concrete Manhole)	11/12
HMEP/0500/004	Type 5 Chamber (Precast Concrete Manhole)	11/12
HMEP/0500/005	Backdrop Manhole Details	11/12
HMEP/0500/006	Soakaway Chamber (Precast Concrete Construction)	11/12
HMEP/0500/007	Precast and Insitu Cast Gullies	11/12
HMEP/0500/008	Headwalls: Type 1 and 2	11/12
HMEP/0500/009	Headwalls: Type 3 and 4	11/12
HMEP/0500/010	Headwall Type 5 and Ditch Lining Detail	11/12
Series 700 – Road Pavements – General		
	None	
Series 900 – Road Pavements – Bituminous Bound Materials		
	None	
Series 1100 – Kerbs, Footways and Paved Areas		
HMEP/1100/01	Textured Modular Paving and Precast Concrete Paving Slabs	11/12
HMEP/1100/02	Footway Edging Kerbs Precast Concrete Construction and Timber	11/12
HMEP/1100/03	Standard Kerbing Detail	11/12
HMEP/1100/04	Flush Uncontrolled Pedestrian Dropped Crossing Type PDC - 1	11/12
HMEP/1100/05	Vehicle Crossing Standard Detail (Commercial) Type VCC - 1	11/12
HMEP/1100/06	Vehicle Crossing Standard Detail (Residential) Type VCR - 1	11/12
HMEP/1100/07	Raised Bus Kerbs – Standard Detail	11/12

Drawing No.	Drawing Title	Date
HMEP/1100/08	Precast Concrete Pedestrian Block Paving – Light Traffic, Class A Roads and Industrial Areas	11/12
HMEP/1100/09	Flexible Footway – Pavement Construction Details Type BF1-3	11/12
Series 1300 – Road Lighting Columns and Brackets		
HMEP/1300/01	5 and 6 metre Tubular Steel Column (Post Top)	10/12
HMEP/1300/02	8 metre Tubular Steel Column (Post Top)	10/12
HMEP/1300/03	10 metre Tubular Steel Column (Post Top)	10/12
HMEP/1300/07	Tubular Steel Column Mid Hinged 5, 6 and 8 metre (Post Top)	10/12
HMEP/1300/08	Tubular Steel – Steel Base Hinged 5, 6, 8, and 10 metre	10/12
HMEP/1300/09	Single Arm for 8 and 10 metre Column Bracket Detail	10/12
HMEP/1300/10	Double Arm for 8 and 10 metre Column Bracket Detail	10/12
HMEP/1300/11	Single Arm for 5 and 6 metre Column Bracket Detail	10/12
HMEP/1300/12	Post Top Mounted Spigot Adaptor for 8 and 10 metre Column	10/12
HMEP/1300/19	Column and Bracket Manufacturer Identification Labels	10/12
Series 1700 – Structural Concrete		
	None	
Series 1800 – Structural Steelwork		
	None	
Winter Maintenance Materials		
	None	

Standard Detail Drawings will be made available separately from this document for download from the HMEP website in the form of .pdf files.



Drawing Standardisation	SA	10/12	1
Revision Details	By	App	Rev

**TYPE 2 CHAMBER
(PRECAST CONCRETE
MANHOLE)**

Scale: A4
NTS

Designed	Drawn	Checked
30.05.12	QAS	EV
Approved	Date	Rev
EV	19/11/12	1

Drawing Number: HMEP/0500/001



Highways Department's Highway Programme

Notes

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. Chamber walls and cover slab to be constructed in precast concrete to BS EN 1917 and BS 5911-3.
3. For details of pipe sizes, invert levels and type of cover and frame, see Drawings and Appendix 5/1.
4. Safety chain and guardrail required where outfall pipe is 600 diameter or greater. Toe hold and handhold required where outfall pipe is 500 diameter or greater. For details of safety chain and handhold see HDC Drawing Number FN.
5. See SHW regarding backfilling/surround to chamber.
6. All ST concrete shall be to SHW, Clause 2692.
7. Mortar bed shall be in accordance with HMEP CL 507 unless specified otherwise in Appendix 5/1.

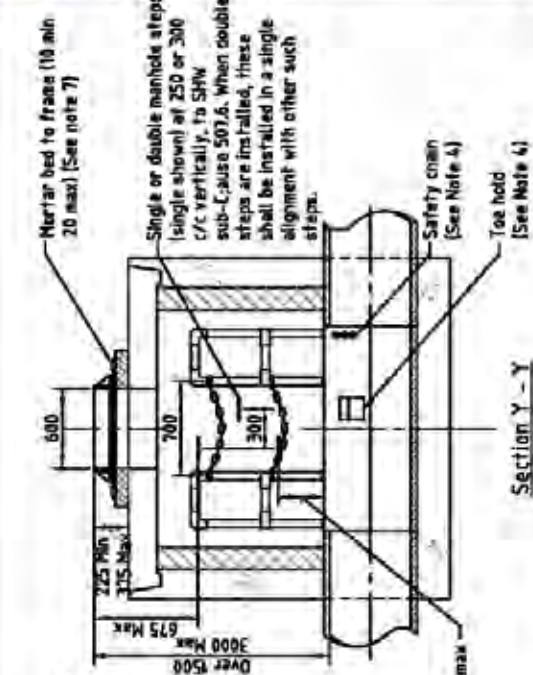
Drawing Standardisation	SA	10/12	1
Revision Details	By	App	Date Rev

Drawing Title
**TYPE 3 CHAMBER
(PRECAST CONCRETE
MANHOLE)**

Scale @ A4
NTS

Designed	08.06.12	Drawn	GAS	Checked	EV
Approved	EV	Date	19/11/12	Rev	1

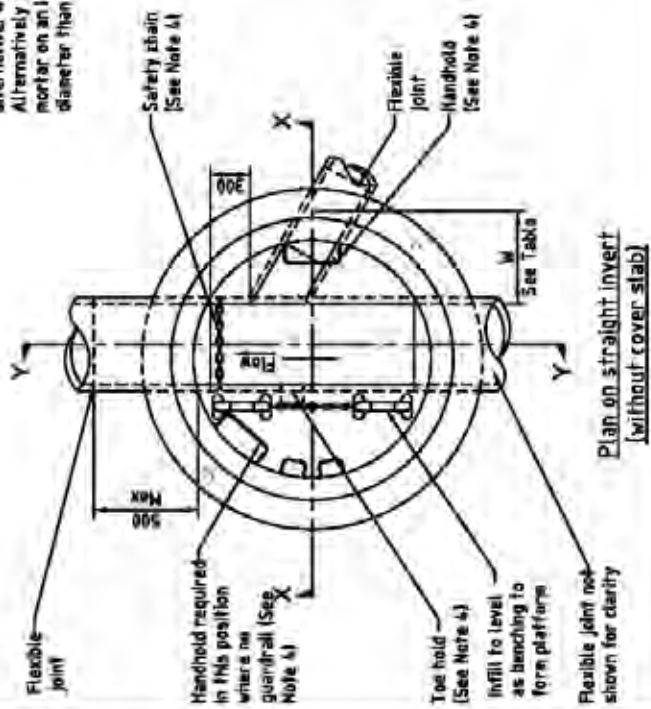
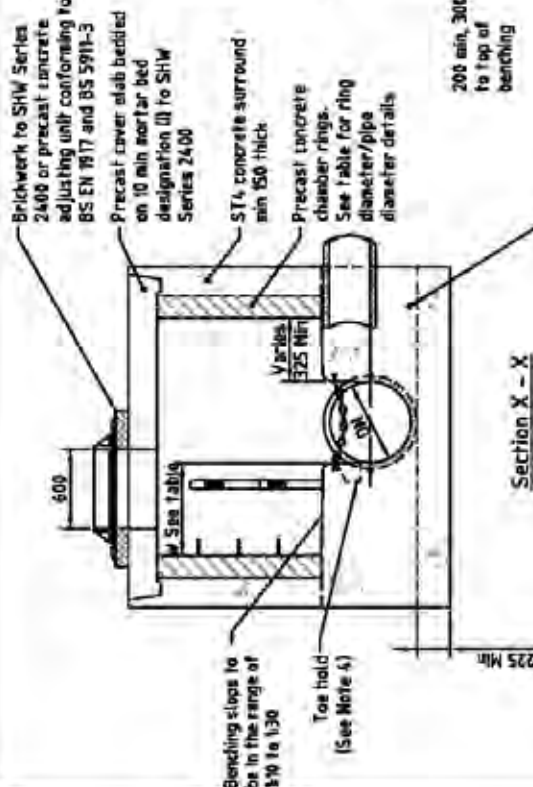
Drawing Number
HMEP/0500/002

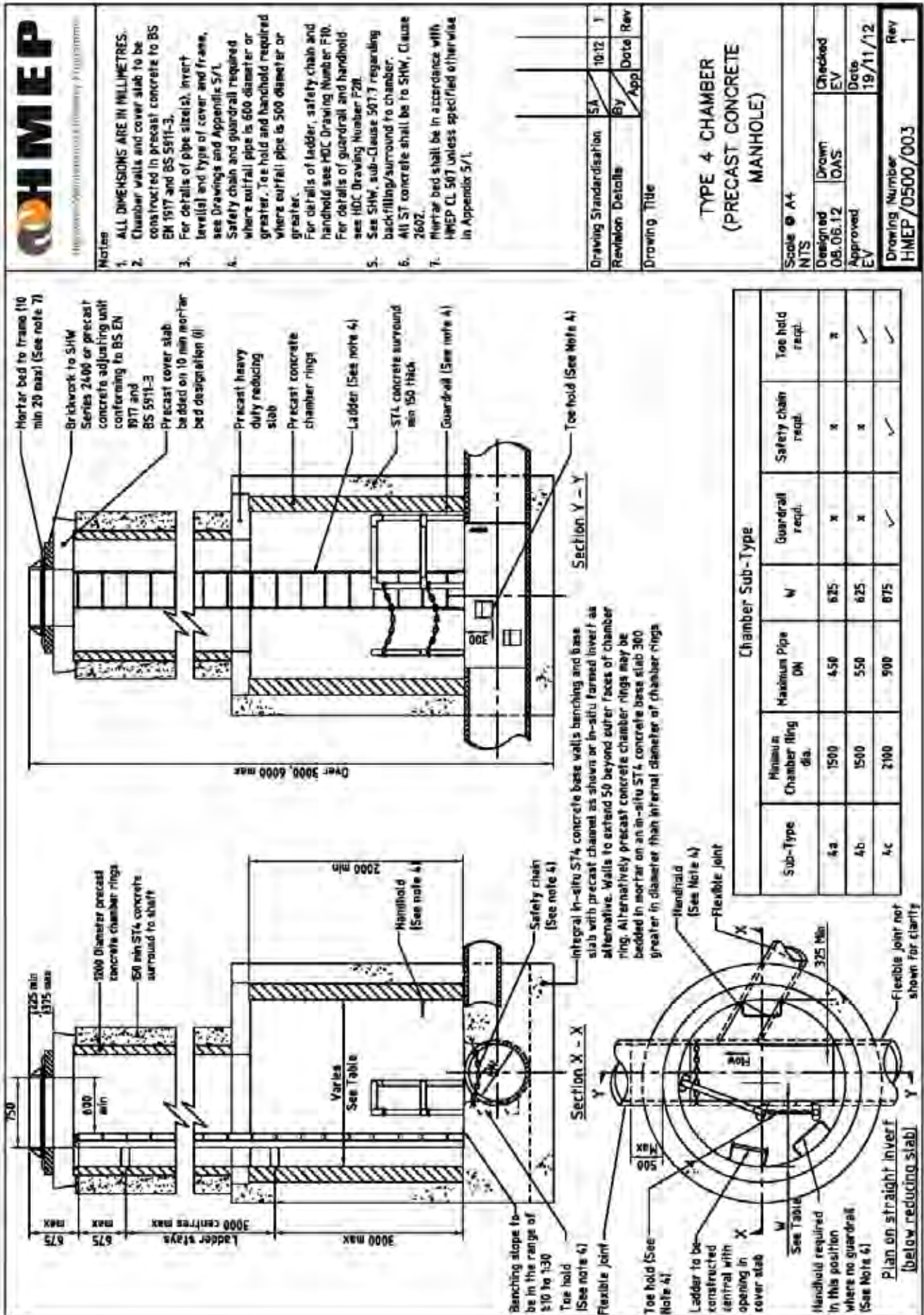


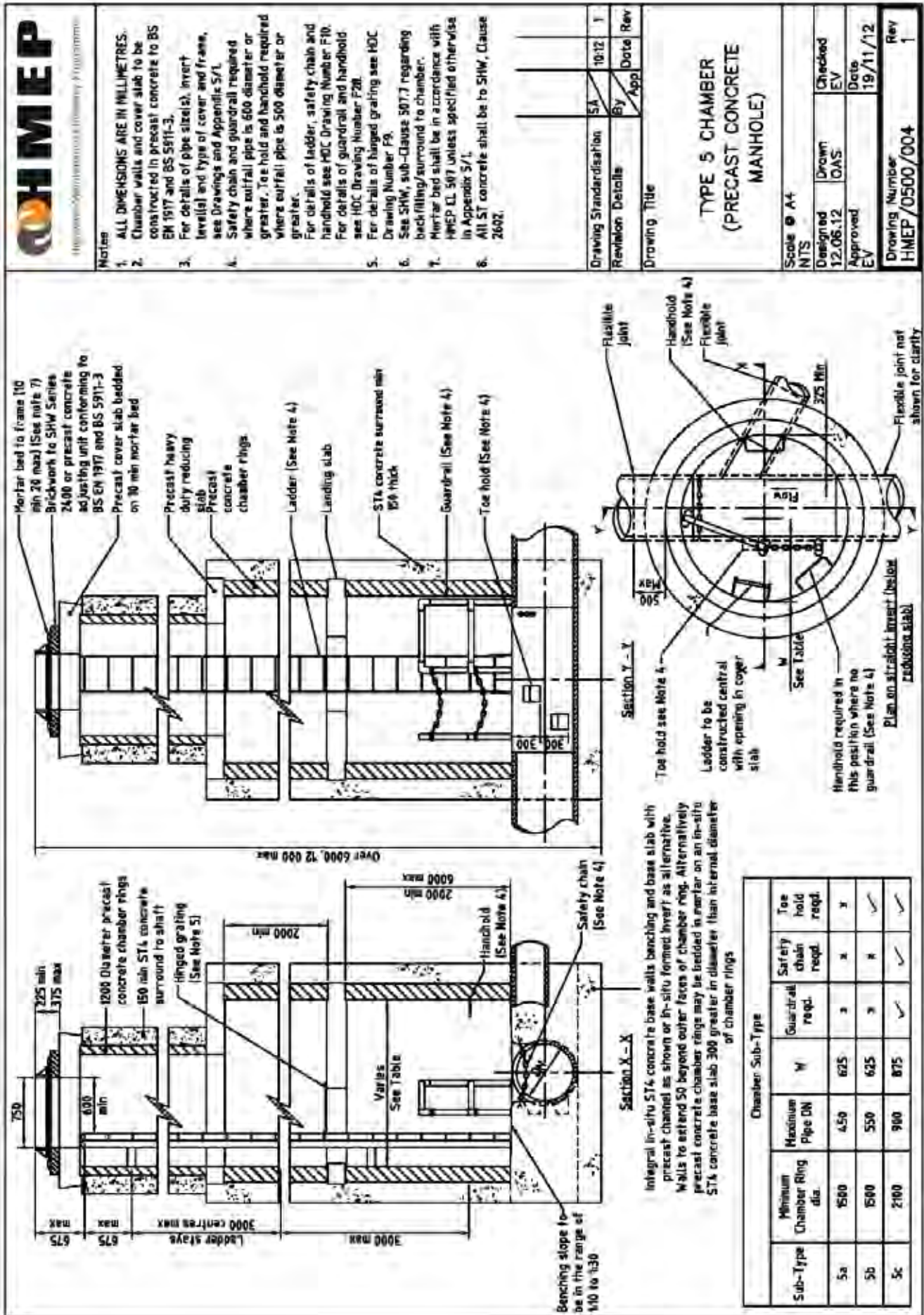
Integral in-situ ST4 concrete base walls benching and base slab with precast channel as shown or in-situ formed invert as alternative. Walls to extend 50 beyond outer faces of chamber ring. Alternatively precast concrete chamber rings may be bedded in mortar on an in-situ ST4 concrete base slab 300 greater in diameter than internal diameter of chamber rings

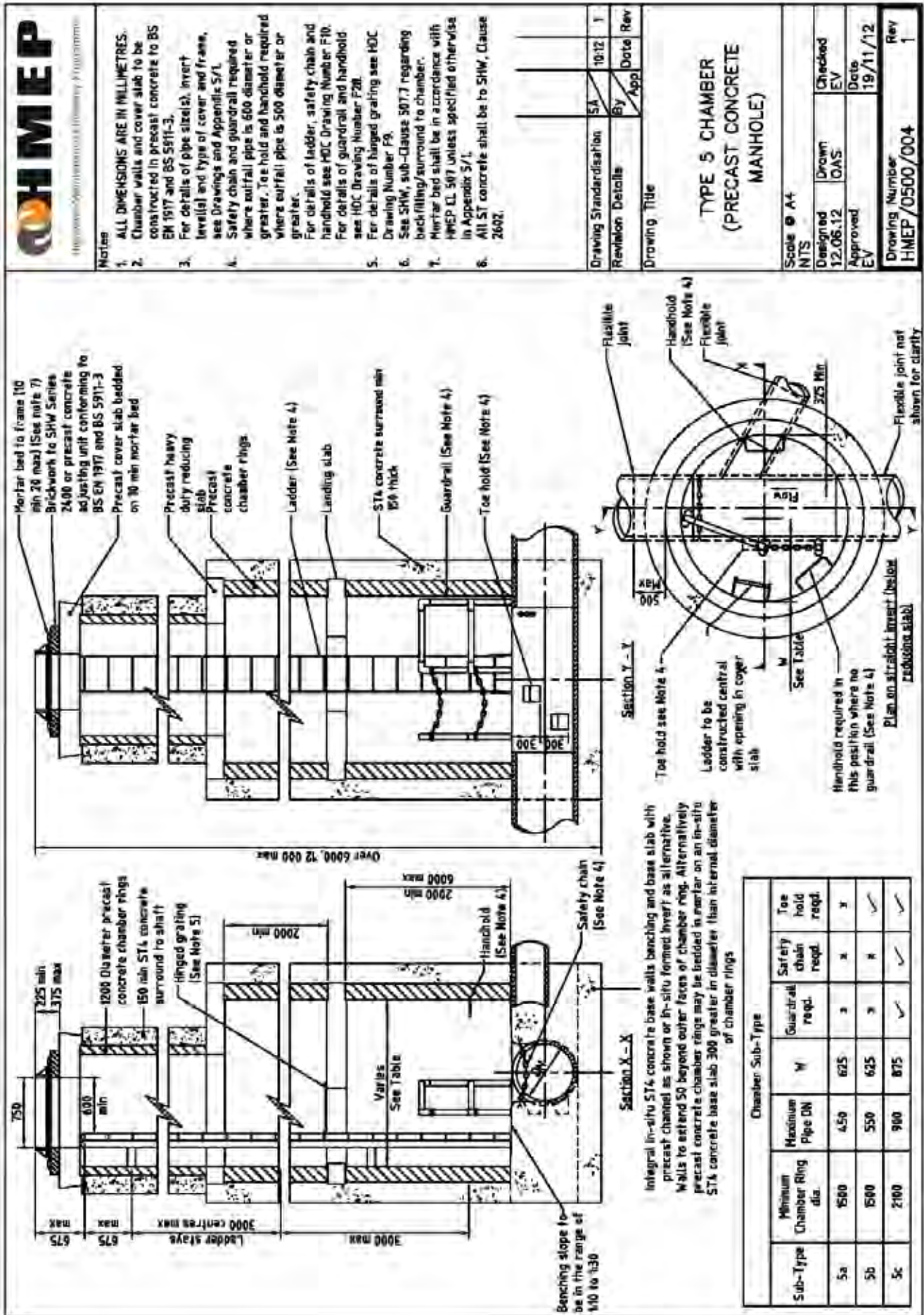
Chamber Sub-Type

Sub-Type	Minimum Chamber Ring dia.	Maximum Pipe DN	Maximum No. of Branches	W
3a	1200	300	1	575
3b	1500	450	1	575
3c	1800	700	1	775
3d	2100	900	1	875









Highways Operations and Maintenance Programme

Drawing Standardisation
Revision Details
By: SA
App: 10/12
Date Rev: 1

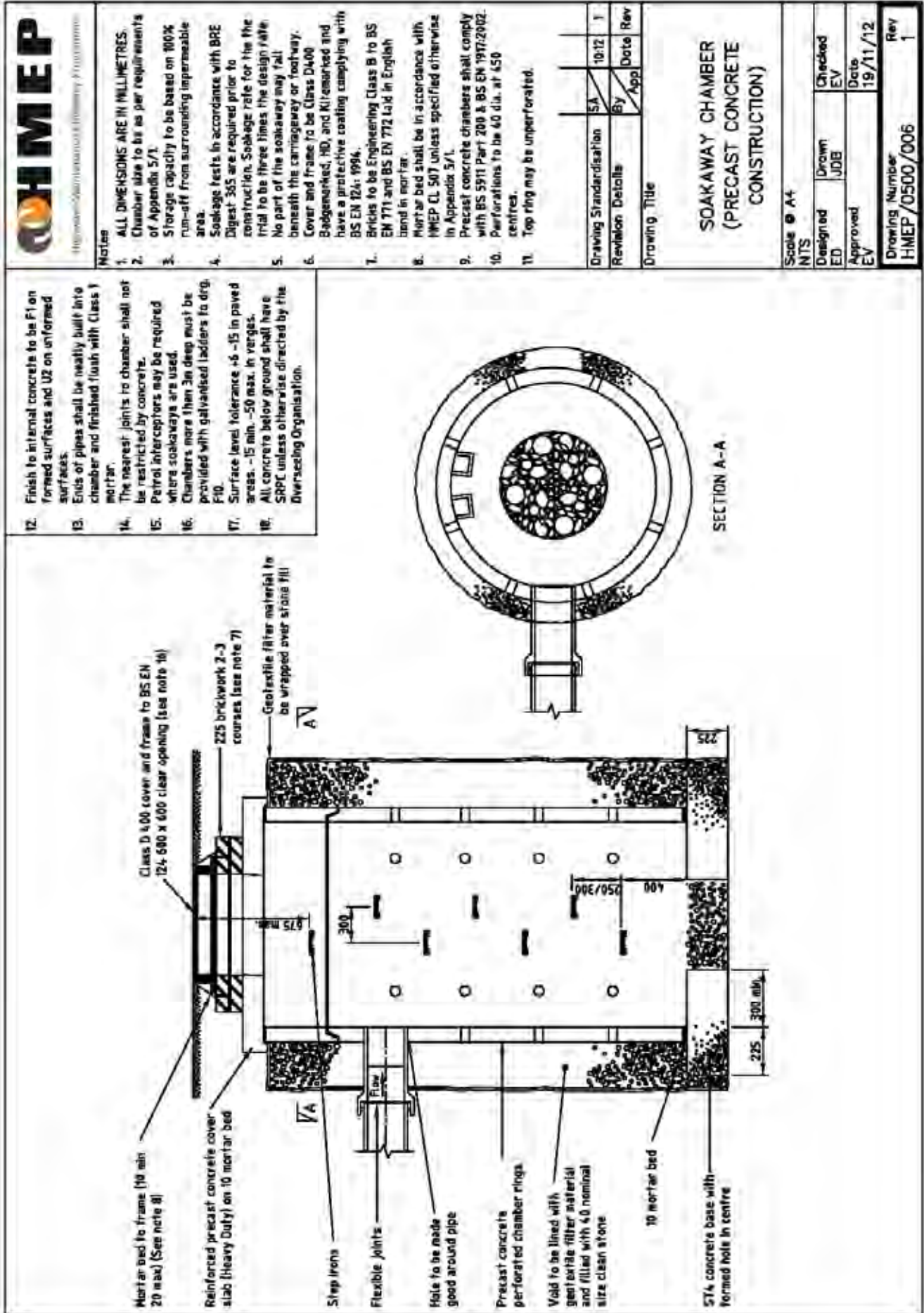
Drawing Title
**TYPE 5 CHAMBER
(PRECAST CONCRETE
MANHOLE)**

Scale: A4
NTS
Designed: 12.06.12
Drawn: OAS
Checked: EV
Approved: EV
Date: 19/11/12
Rev: 1

Drawing Number
HMEP/0500/004

12







Highways Department Primary Programme

Notes

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. For details of gully top, see Appendix 5/1.
3. The minimum depth from the top of the grating to the top of the gully outlet is to be 750 when the connecting pipe is under a carriageway or a hard shoulder and 600 elsewhere.
4. Precast concrete gullies and cover slabs shall be to BS 5911-6.
5. When an in-situ cast gully has a trap, the stoppers shall comply with the requirements of BS 5911-4 and BS EN 1917.
6. Alternative rising section shown on Drawing No. F14 may be used.
7. All ST concrete shall be to SHW Clause 2602.
8. Gullies shall be bedded on an in-situ concrete slab of 150 min. thickness and surrounded by concrete 150 min. thickness extending to the sides of the excavation.
9. Mortar bed shall be in accordance with HMEP CL 507 unless specified otherwise in Appendix 5/1.

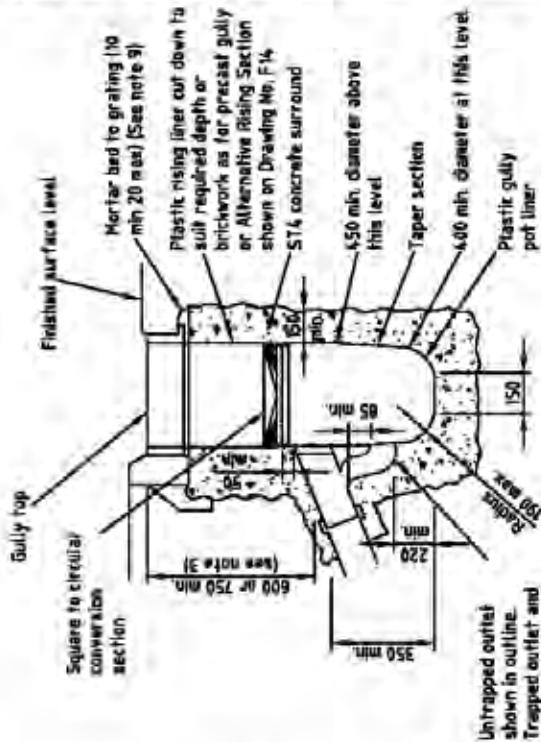
Drawing Standardisation	SA	10/12	1
Revision	Details	By	Date
Drawing Title		Rev	

PRECAST AND INSITU CAST GULLIES

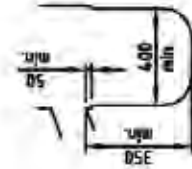
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Approved		Date
EV		19/11/12

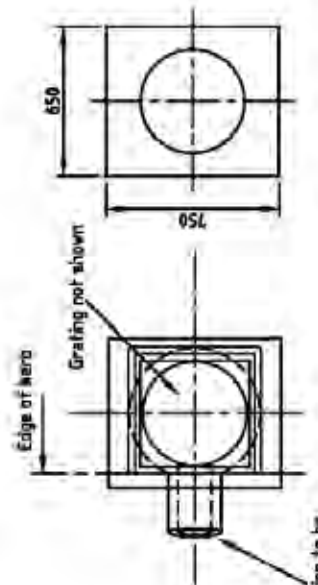
Drawing Number	Rev
HMEP/0500/007	1



IN-SITU CAST GULLY

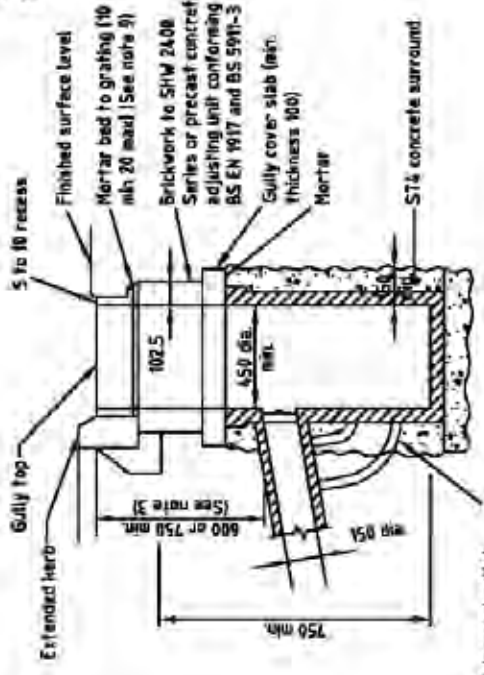


ALTERNATIVE IN-SITU CAST SUMP (PARALLEL SIDES)



GULLY COVER SLAB

PLAN



PRECAST GULLY



Highways Department's Highway Programme

Notes

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. Headwall dimensions:
 - a. H = height of headwall from outfall invert level to top of parapet;
 - b. X = width of ditch invert; and
 - c. D = internal diameter of pipe.
3. Refer to HMEP/0509/010 for ditch lining details.
4. Refer to drainage schedule in Appendix 5/1 or scheme specific contract drawings for pipe diameter and ditch side slope gradient).
5. Concrete finishes shall comply with Clause 2402.
6. Brickwork shall be English bond and comprise class B clay engineering bricks to BS EN 771-1:2003, bedded on mortar. Brickwork shall comply with Clauses 2406 and 2412.
7. Mortar shall comply with Clause 2404 designation (f).
8. The nearest pipe joint on pipes where diameter 'D' is greater than 375mm shall be no more than 1m from the outer face of the headwall.
9. Environment Agency or Drainage Authority approval is required where headwalls discharge into natural watercourses.
10. The base on Type 2 headwalls shall be finished to the nearest complete brick width above the minimum dimension stated.

Drawing Standardisation	SA	10/12	1
Revision Details	By	App	Date Rev

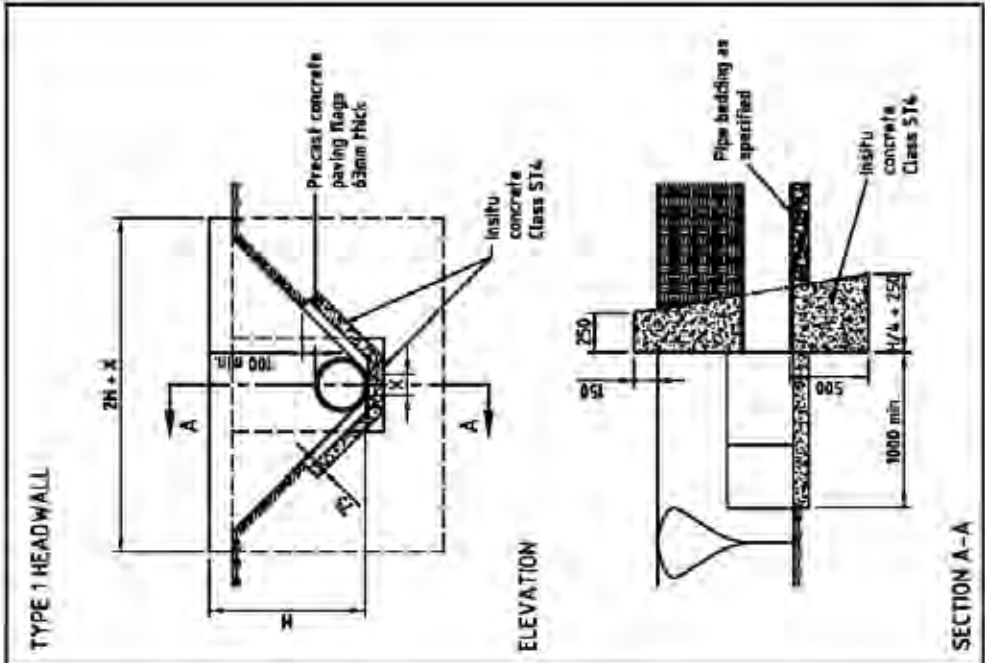
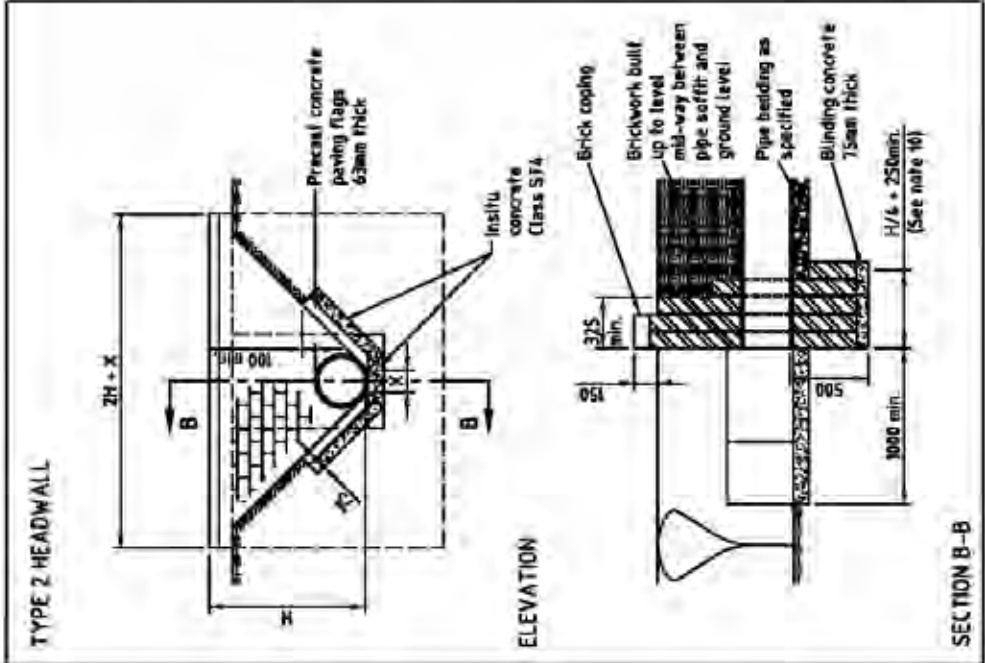
Drawing Title

HEADWALLS: TYPE 1 AND 2

Scale: A4
NTS

Designed	Drawn	Checked
ED	JOB	EV
Approved		Date
EV		19/11/12

Drawing Number	Rev
HMEP/0500/008	1





Highway Maintenance Efficiency Programme

Notes

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. Headwall dimensions:
 - a. H = height of headwall from outlet invert level to top of parapet;
 - b. X = width of ditch invert; and
 - c. D = internal diameter of pipe.
3. Refer to HMEP/0500/010 for ditch lining details.
4. Refer to drainage schedule in Appendix 5/1 on scheme specific contract drawings for pipe diameter and ditch side slope gradient.
5. Concrete finishes shall comply with Clause 2602.
6. Brickwork shall be English bond and comprise class B clay engineering bricks to BS EN 771-102003, bedded on mortar. Brickwork shall comply with Clauses 2406 and 2412.
7. Mortar shall comply with Clause 2404 designation (i).
8. The nearest pipe joint on pipes where diameter 'D' is greater than 375mm shall be no more than 1m from the outer face of the headwall.
9. Environment Agency or Drainage Authority approval is required where headwall discharge into natural water courses.
10. The maximum height 'H' and pipe diameter 'D' on Type 3 Headwalls shall be 1000mm and 300mm respectively.

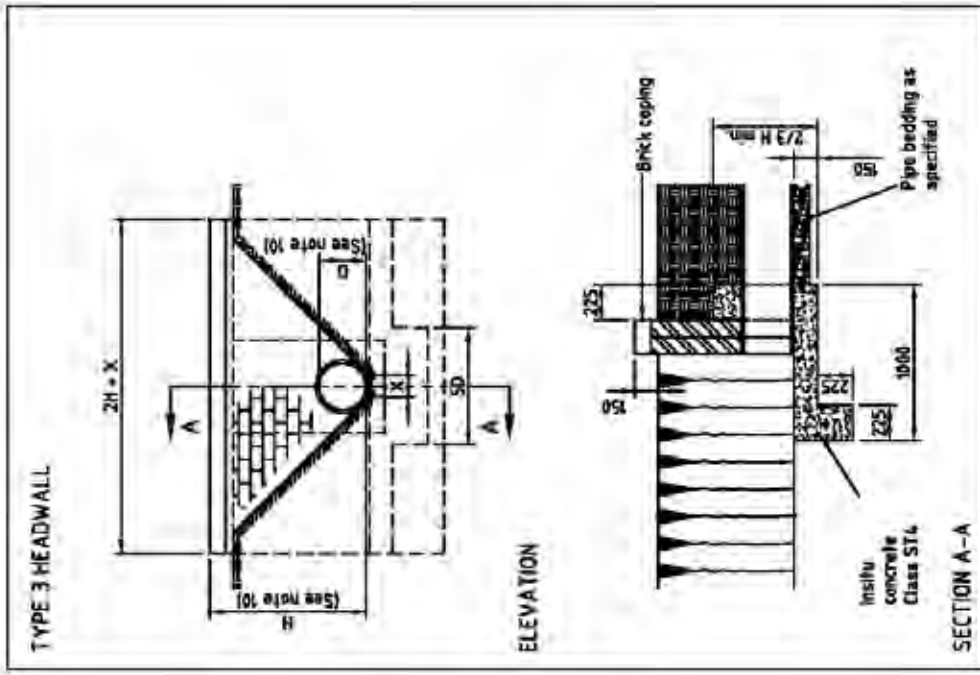
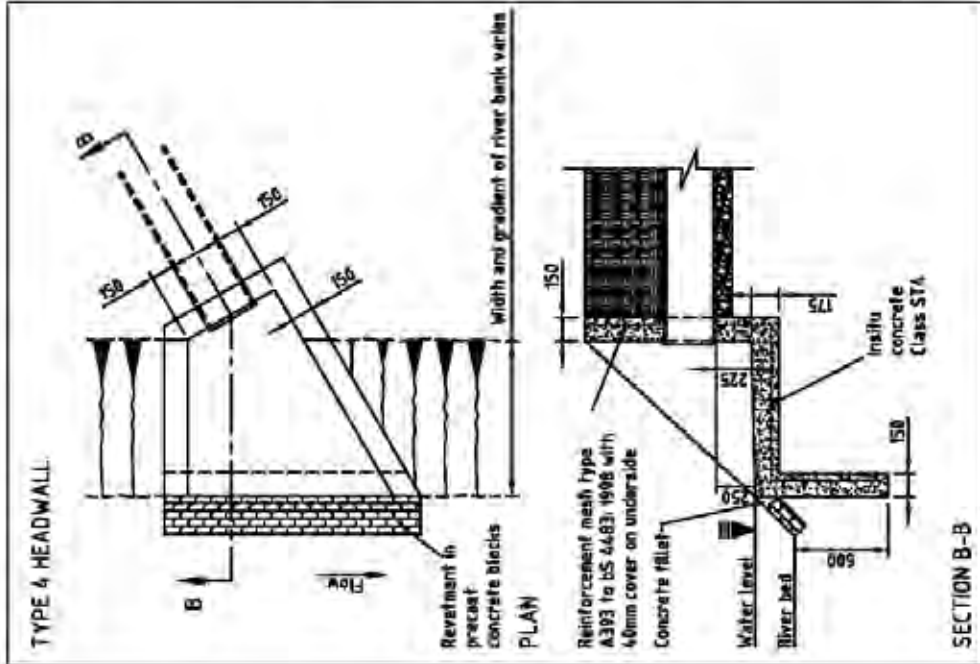
Revision	Details	By	App	Date	Rev
Drawing Title					

**HEADWALLS:
TYPE 3 AND 4**

Scale: A4
NTS

Designed	Drawn	Checked
ED	JDB	
Approved		Date
EV		19/11/12

Drawing Number
HMEP/0500/009
Rev 1





Highways Department Highway Programme

Notes

1. ALL DIMENSIONS ARE IN MILLIMETRES. Headwall dimensions:
 - a. H = height of headwall from outfall invert level to top of parapet;
 - b. X = width of ditch invert; and
 - c. D = internal diameter of pipe.
 Refer to drainage schedule in Appendix 5/1 or scheme specific contract drawings for pipe diameter and ditch side slope gradient.
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4. Mortar shall comply with Clause 2404 designation iii.
5. The nearest pipe joint on pipes where diameter 'D' is greater than 375mm shall be no more than 1m from the outer face of the headwall.
6. Environment Agency or Drainage Authority approval is required where headwalls discharge into natural watercourses.

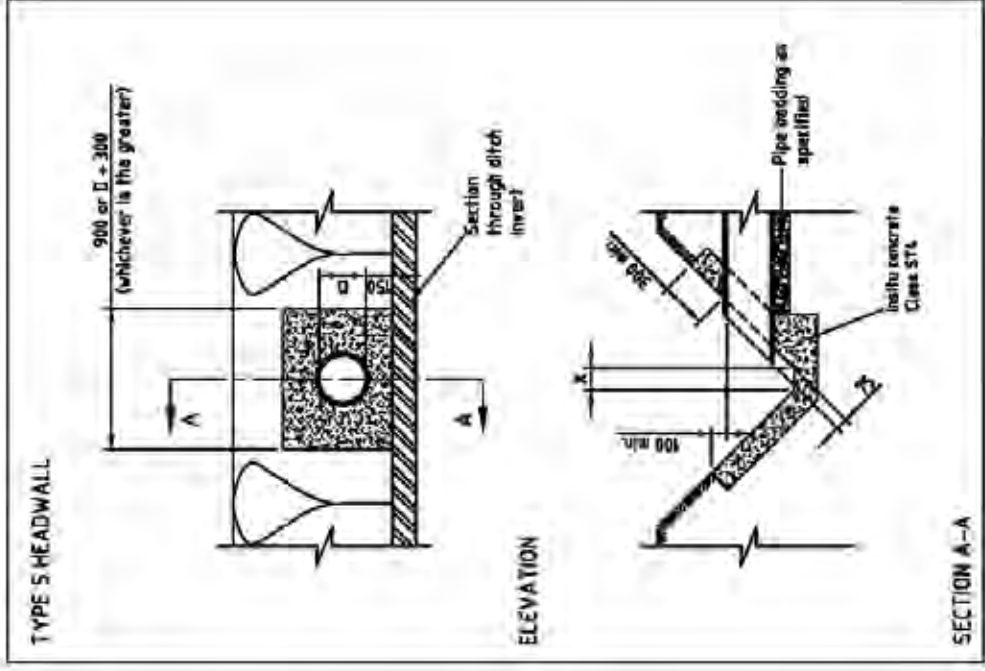
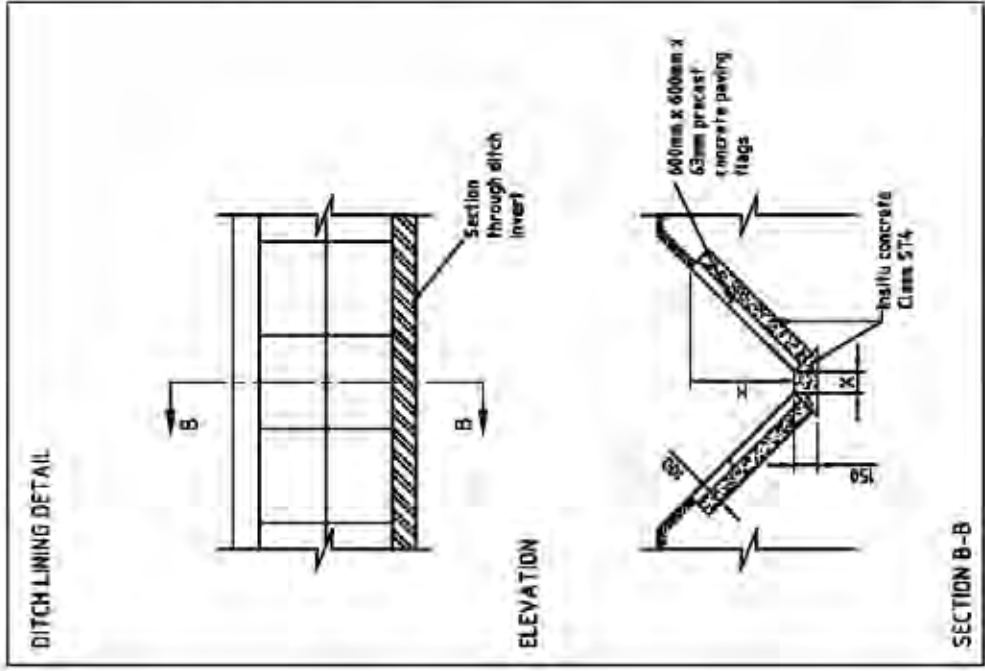
Drawing Standardisation	SA	10/12	Y
Revision Details	By	Date	Rev
	App		


Drawing Title

**HEADWALL TYPE 5
AND DITCH LINING DETAIL**

Scale @ A+

Designed	Drawn	Checked
ED	JOB	EV
Approved		Date
EV		19/11/12
Drawing Number		Rev
HMEP/0500/010		1





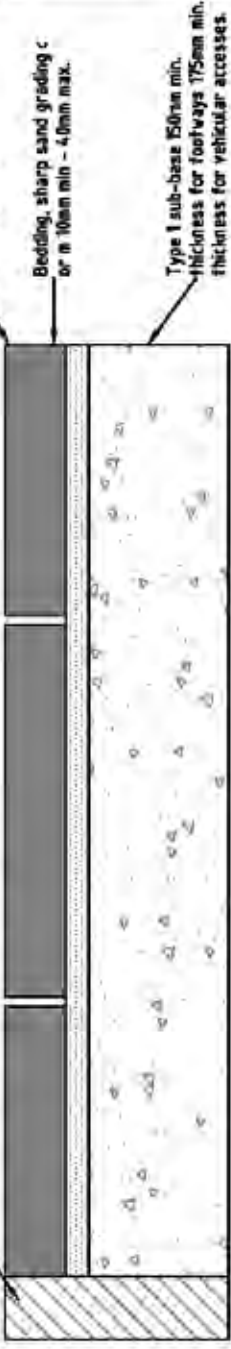
HMEP
Highway Maintenance Contracting Program

Notes

- To achieve maximum structural benefit, modular paving should not be cut. Only full slabs should be used with staggered bond and cutting to obstructions dealt with by using 65mm paving blocks.
- Joints should be within 2-5mm between each paver.
- Modular paving areas can still only be trafficked after final filling of joints with clean dry sand.
- All dimensions in millimetres unless otherwise shown.

Drawing Standardisation	SA	10/12	1
Revision Details	By	Date	Rev

400 x 400 x 65mm TEXTURED MODULAR PAVING TYPE TMP1- PEDESTRIAN OR LIGHT VEHICLE TRAFFIC



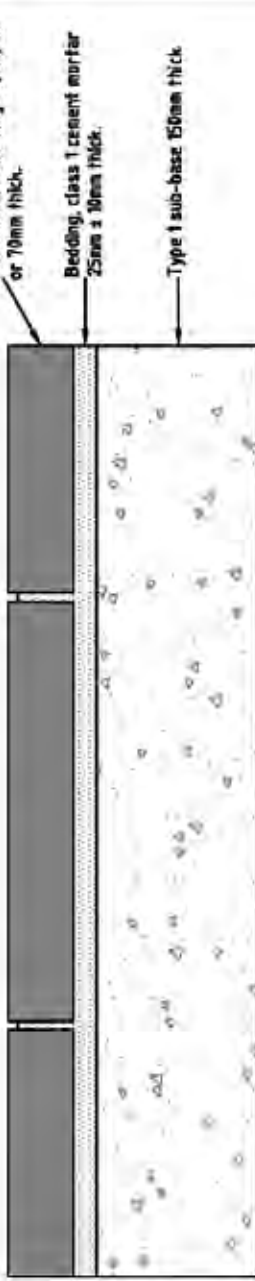
Edge restraints to retain the construction and minimise creep, precast kerbs, edgings or channels.

400 x 400 x 65mm textured modular paving.

Bedding, sharp sand grading c or n 10mm min - 40mm max.

Type 1 sub-base 150mm min. thickness for footways 175mm min. thickness for vehicular accesses.

PRECAST CONCRETE FLAGS TYPE PCF 1 - FOOTWAY (MORTAR BED)

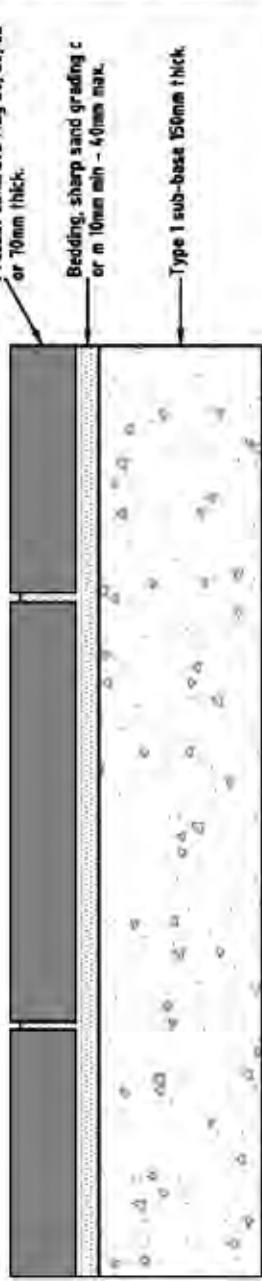


Precast concrete flag 50, 60, 63 or 70mm thick.

Bedding, class 1 cement mortar 25mm ± 10mm thick.

Type 1 sub-base 150mm thick.

PRECAST CONCRETE FLAGS TYPE PCF 2 - FOOTWAY (SHARP SAND BED)



Precast concrete flag 50, 60, 63 or 70mm thick.

Bedding, sharp sand grading c or n 10mm min - 40mm max.

Type 1 sub-base 150mm thick.

Drawing Title

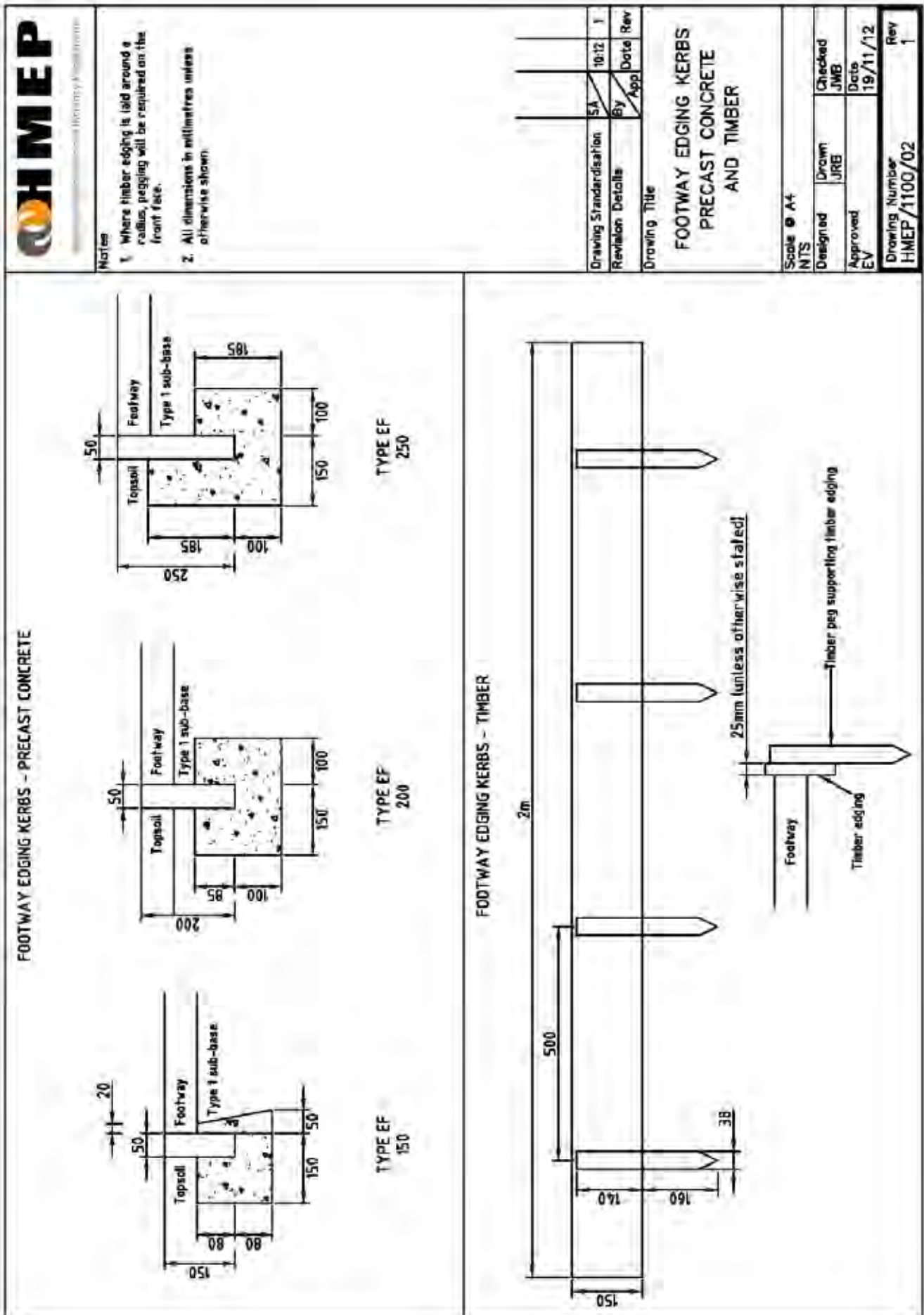
TEXTURED MODULAR PAVING, AND PRECAST CONCRETE PAVING SLABS

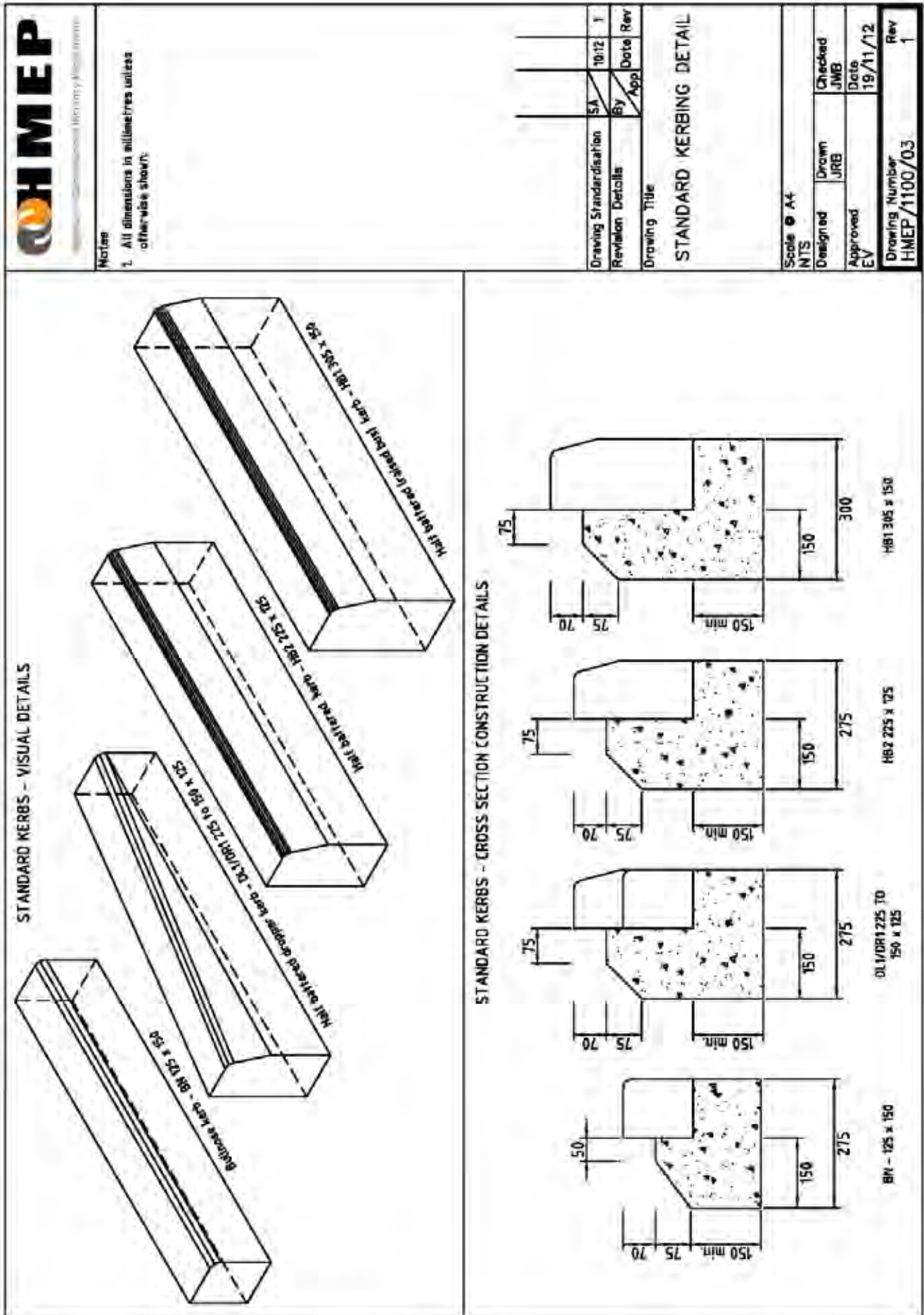
Scale Ⓢ A4
NTS

Designed	Drawn	Checked
EV	JRB	JMB
Approved	Date	
	19/11/12	

Drawing Number
HMEP/1100/01

Rev
1





Notes

- All dimensions in millimetres unless otherwise shown.

Drawing Standardisation	SA	10/12	Y
Revision Details	By	Date	Rev
Drawing Title		App	

STANDARD KERBING DETAIL

Scale	● A4	
NTS		
Designed	Drawn	Checked
JRB	JRB	JMB
Approved	Date	
EV	19/11/12	
Drawing Number		Rev
HMEP/1100/03		1



Notes

1. Footway to be graded down to create a flush crossing point.
2. Where the footway is flag paved the slopes of each side of the dropped crossing must be saw cut to obtain necessary falls. All sloping flags must be bedded on 75mm ST1 grade concrete. Flags only to be used under the instruction of the overseeing organisation.
3. For kerbing details refer to drawing HMEP/1100/03.
4. All dimensions in millimetres unless otherwise shown.

Drawing Standardisation	SA	10/12	1
Revision Details	By	App	Date Rev

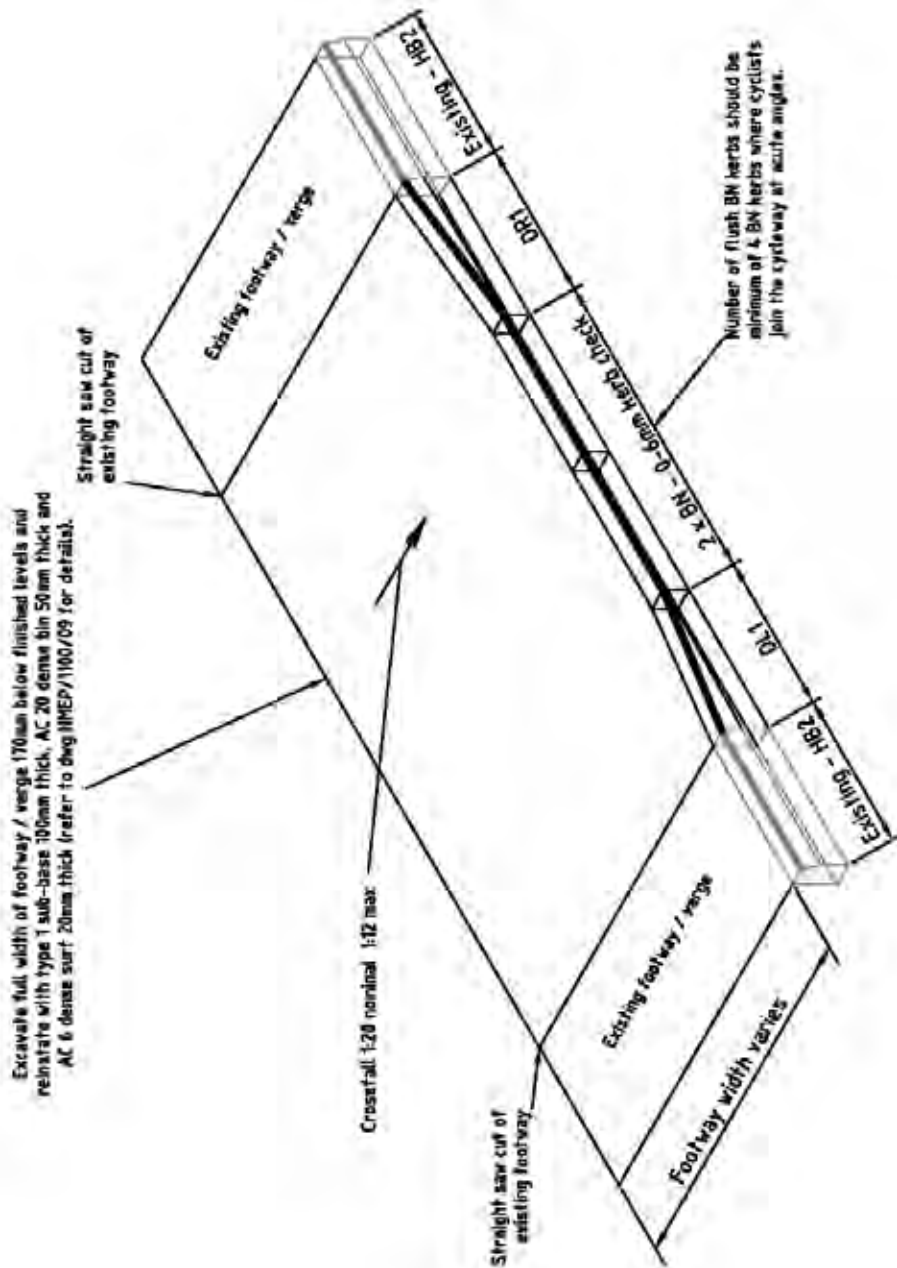
Drawing Title

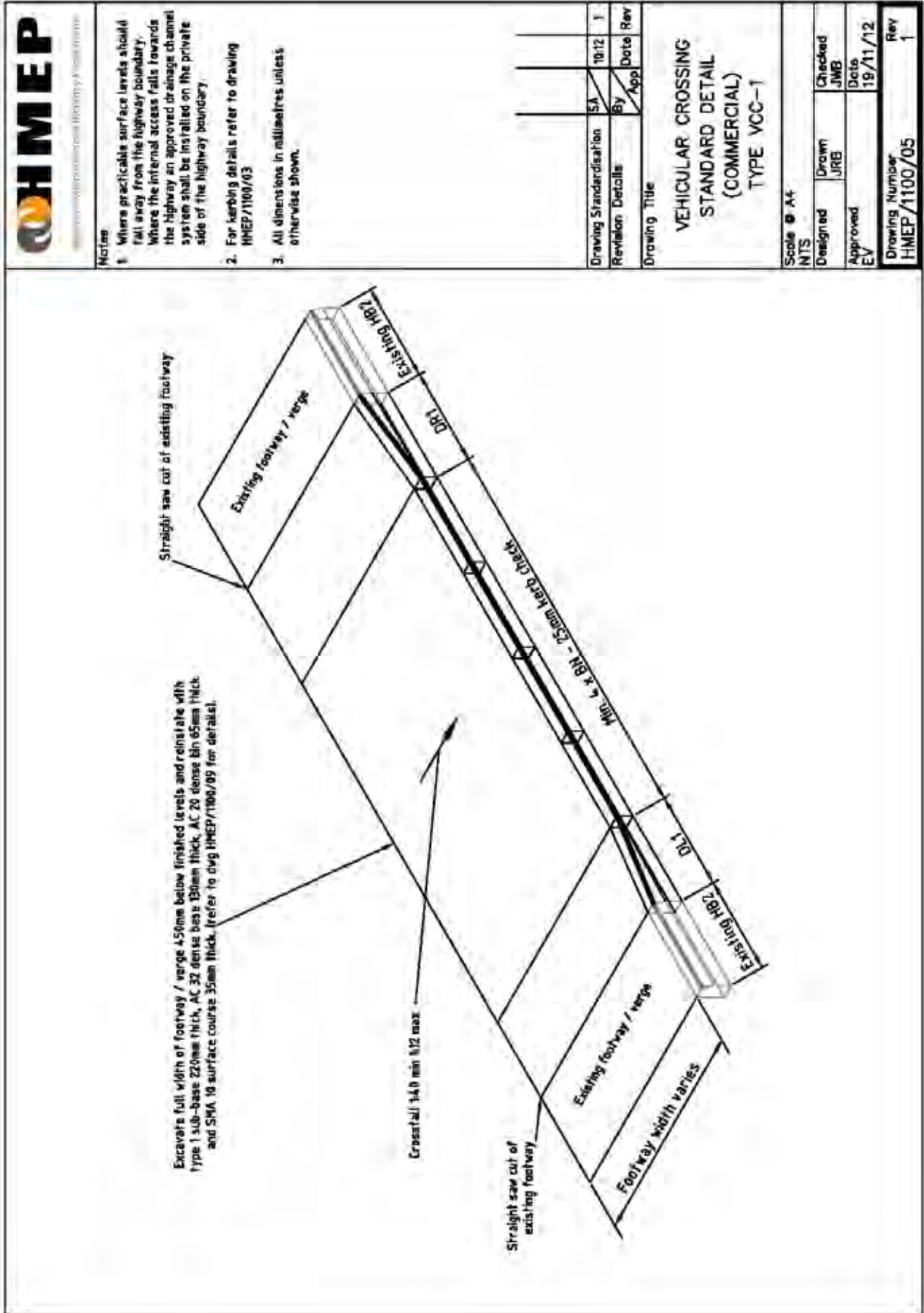
**FLUSH UNCONTROLLED
PEDESTRIAN DROPPED
CROSSING
TYPE PDC-1**

Scale \odot A4
NTS

Designed	Drawn	Checked	Checked by
Approved	JRE		
EV		Date	19/11/12

Drawing Number
HMEP/1100/04
Rev 1





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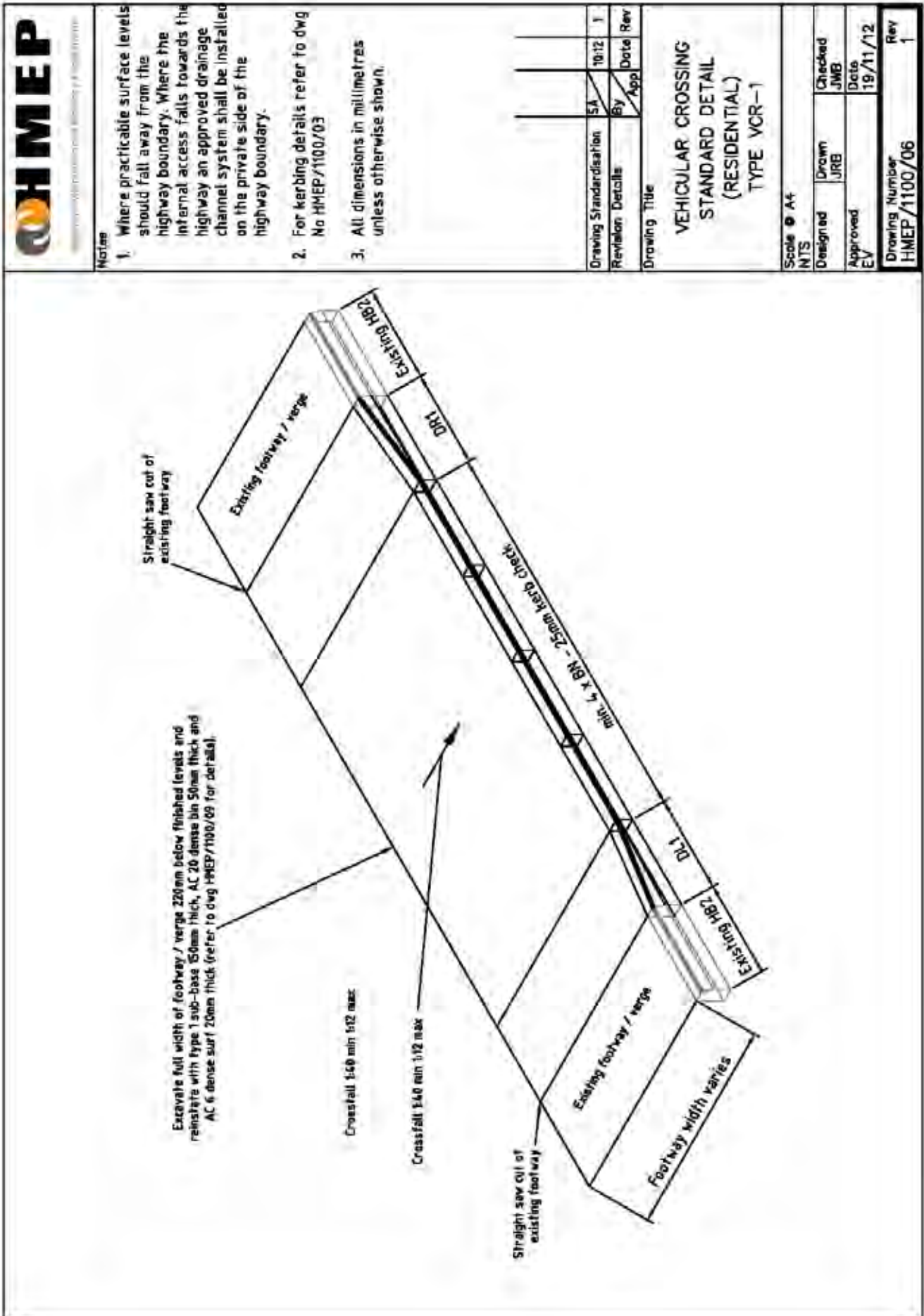
Notes

1. Where practicable surface levels should fall away from the highway boundary. Where the internal access falls towards the highway an approved drainage channel system shall be installed on the private side of the highway boundary.
2. For kerbing details refer to drawing HMEP/1100/03
3. All dimensions in millimetres unless otherwise shown.

Drawing Standardisation	SA	10/12	1
Revision Details	By	Date	Rev
	App		

Drawing Title
**VEHICULAR CROSSING
 STANDARD DETAIL
 (COMMERCIAL)
 TYPE VCC-1**

Scale: A4 NTS	
Designed	Checked
Drawn	JMB
Approved	Date
EV	19/11/12
Drawing Number HMEP/1100/05	
Rev	1



Notes

1. Where practicable surface levels should fall away from the highway boundary. Where the internal access falls towards the highway an approved drainage channel system shall be installed on the private side of the highway boundary.
2. For kerbing details refer to dwg No HMEP/1100/03
3. All dimensions in millimetres unless otherwise shown.

Drawing Standardisation	SA	10/12	1
Revision	Details	By	Date
		App	Rev

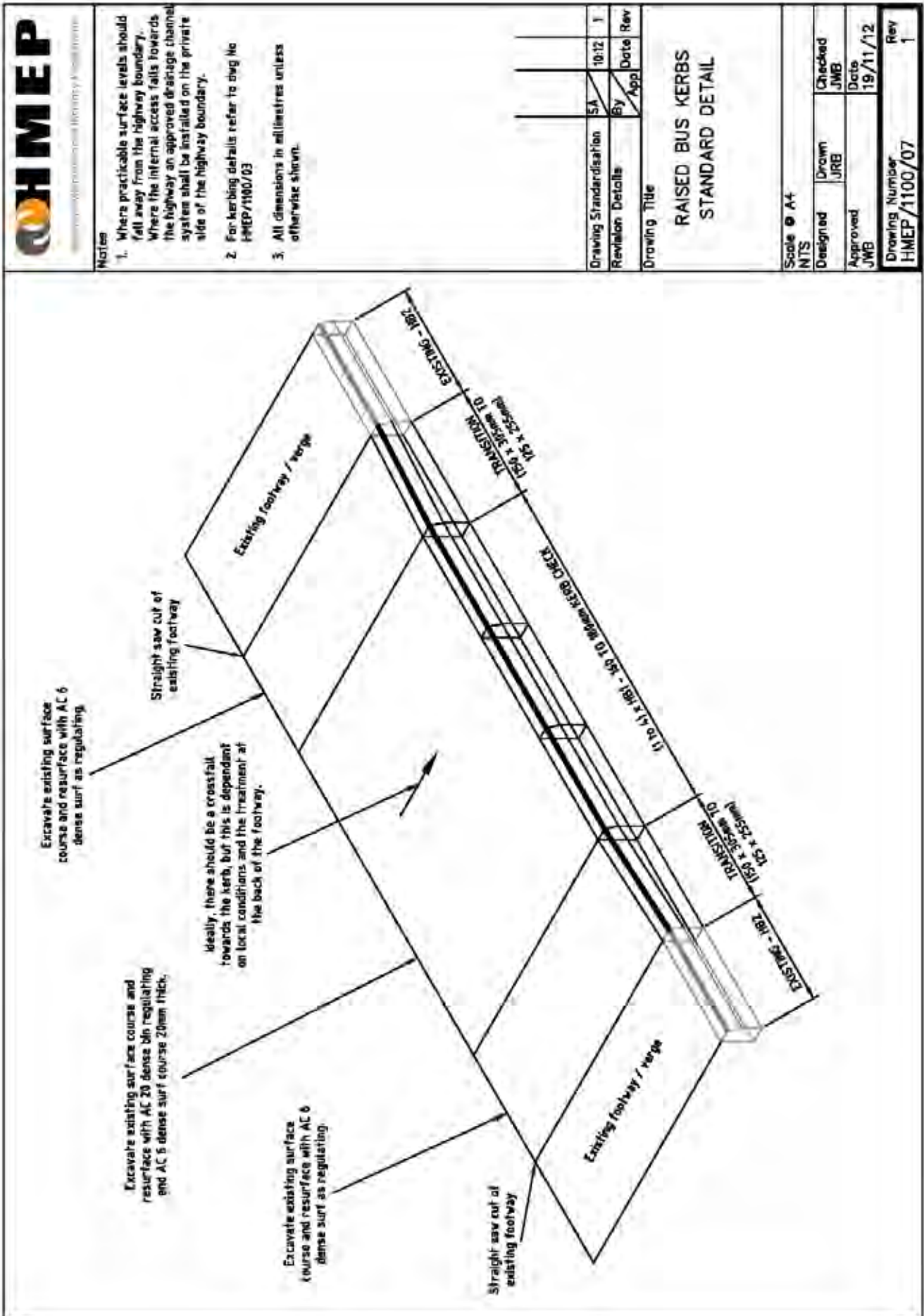
Drawing Title

**VEHICULAR CROSSING
STANDARD DETAIL
(RESIDENTIAL)
TYPE VCR-1**

Scale: A4
NTS

Designed	Drawn	Checked
Approved	JRB	JMB
EV		Date
		19/11/12

Drawing Number	Rev
HMEP/1100/06	1



Notes

1. Where practicable surface levels should fall away from the highway boundary. Where the internal access falls towards the highway an approved drainage channel system shall be installed on the private side of the highway boundary.
2. For kerbing details refer to div No HMEP/1100/03
3. All dimensions in millimetres unless otherwise shown.

Drawing Standardisation	SA	10/12	1
Revision Details	By	Date	Rev

Drawing Title

**RAISED BUS KERBS
STANDARD DETAIL**

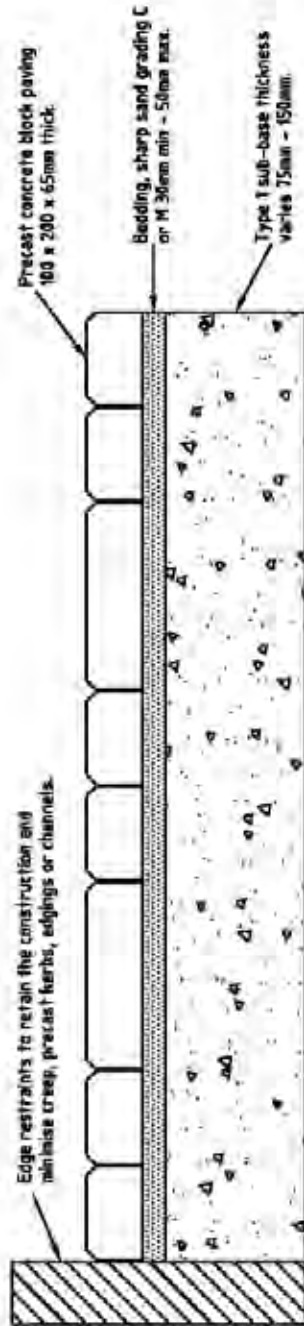
Scale @ A4

NTS

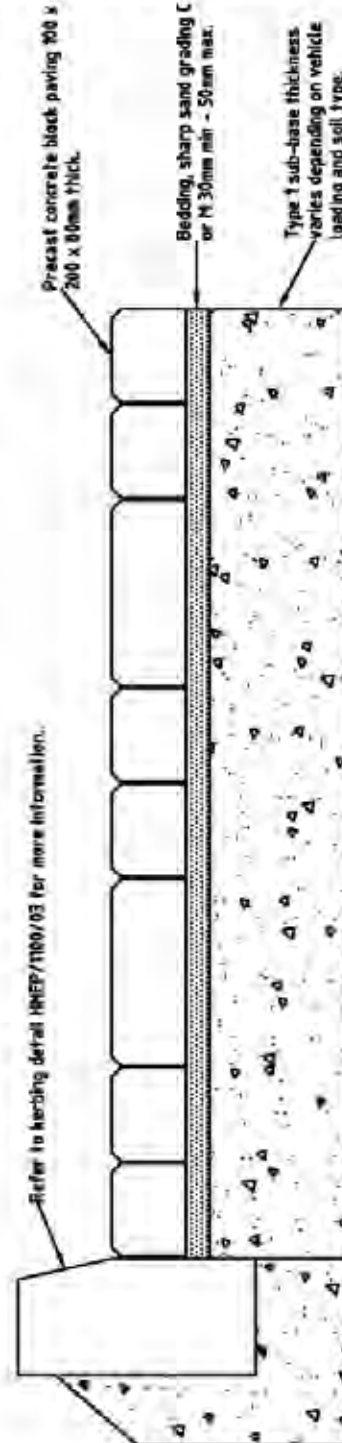
Designed	Drawn	Checked
JWB	JWB	JWB
Approved	Date	
JWB	19/11/12	

Drawing Number	Rev
HMEP/1100/07	1

PRECAST CONCRETE BLOCKS TYPE CBF 1- PEDESTRIAN AND LIGHT VEHICLE TRAFFIC



PRECAST CONCRETE BLOCKS TYPE CBF 2- CLASS A ROADS AND INDUSTRIAL SITUATIONS



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Notes

1. Laying course material may be spread in one layer, alternatively sand may be spread in two layers. The lower 2/3 being pre-compacted and upper 1/3 uncompacted. After compaction reduction will be approx 15-20mm to 50mm thick 9-14mm to 30mm thick.
2. Joints should be within 2-5mm between each paver.
3. No blocks smaller than 1/4 of original size to be used.
4. Modular paving areas can only be trafficked after final filling of joints with clean dry sand.
5. All dimensions in millimetres unless otherwise shown.

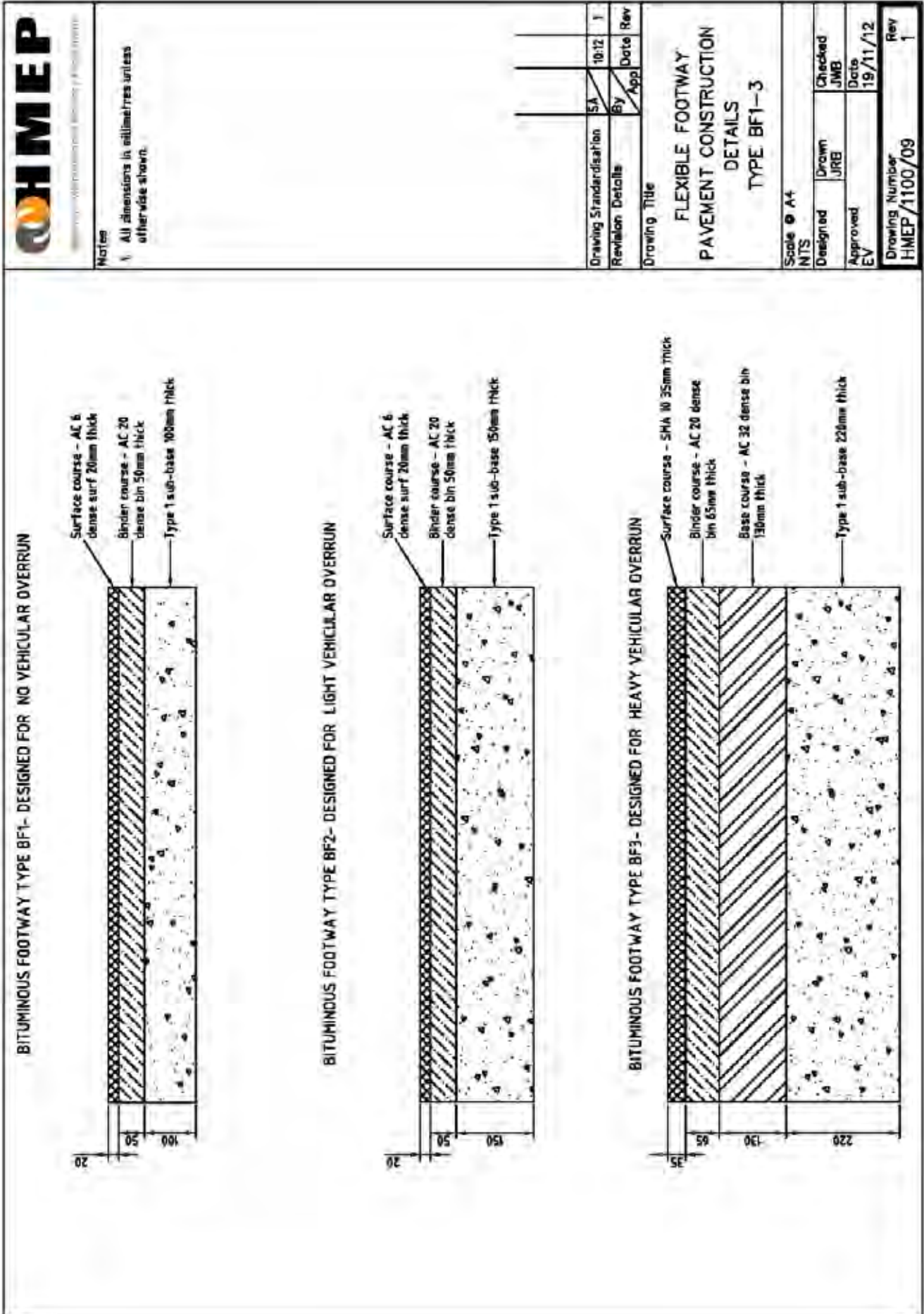
Drawing Standardisation	SA	10/12	1
Revision Details	By	Date	Rev

Drawing Title
**PRECAST CONCRETE
 PEDESTRIANS-BLOCK PAVING
 LIGHT TRAFFIC, CLASS A
 ROADS AND INDUSTRIAL AREAS**

Scale @ A4
 NTS

Designed	Drawn	Checked
EV	JRB	JMB
Approved	Date	
	19/11/12	

Drawing Number
HMEP/1100/08 Rev 1



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Notes

All dimensions in millimetres unless otherwise shown.

Drawing Standardisation	SA	10/12	1
Revision	Details	By	Date
		App	Rev

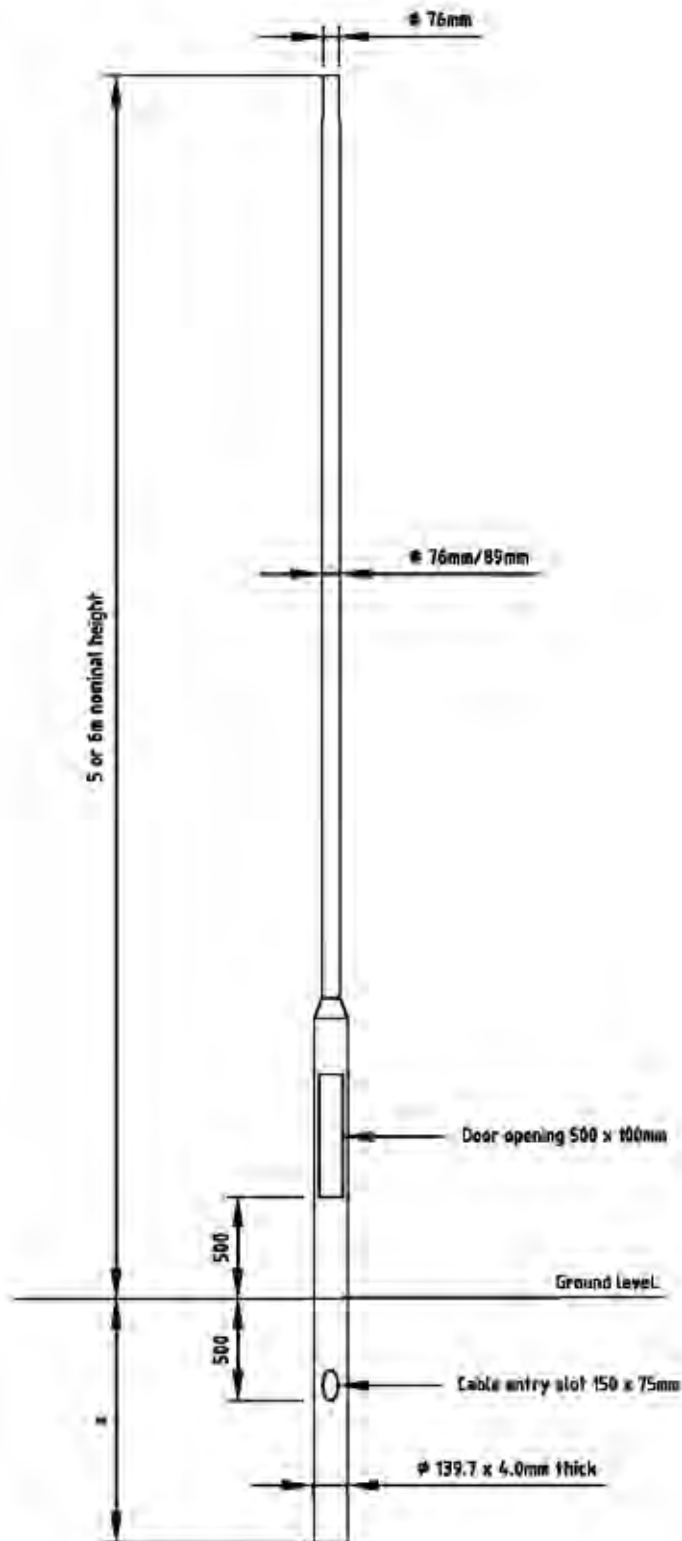
Drawing Title
**FLEXIBLE FOOTWAY
 PAVEMENT CONSTRUCTION
 DETAILS
 TYPE BF1-3**

Scale @ A4
 NTS

Designed	Drawn	Checked
EV	JRB	JMB
Approved	Date	
	19/11/12	

Drawing Number
HMEP/1100/09

Rev
 1



Drawing Title
LIGHTING STANDARD DETAILS
5, 6 METRE TUBULAR
STEEL COLUMN (POST TOP)

Scale: A4
 N.T.S.

Designed	Drawn SA	Checked JRB
Approved SJS	Date 04:10:12	

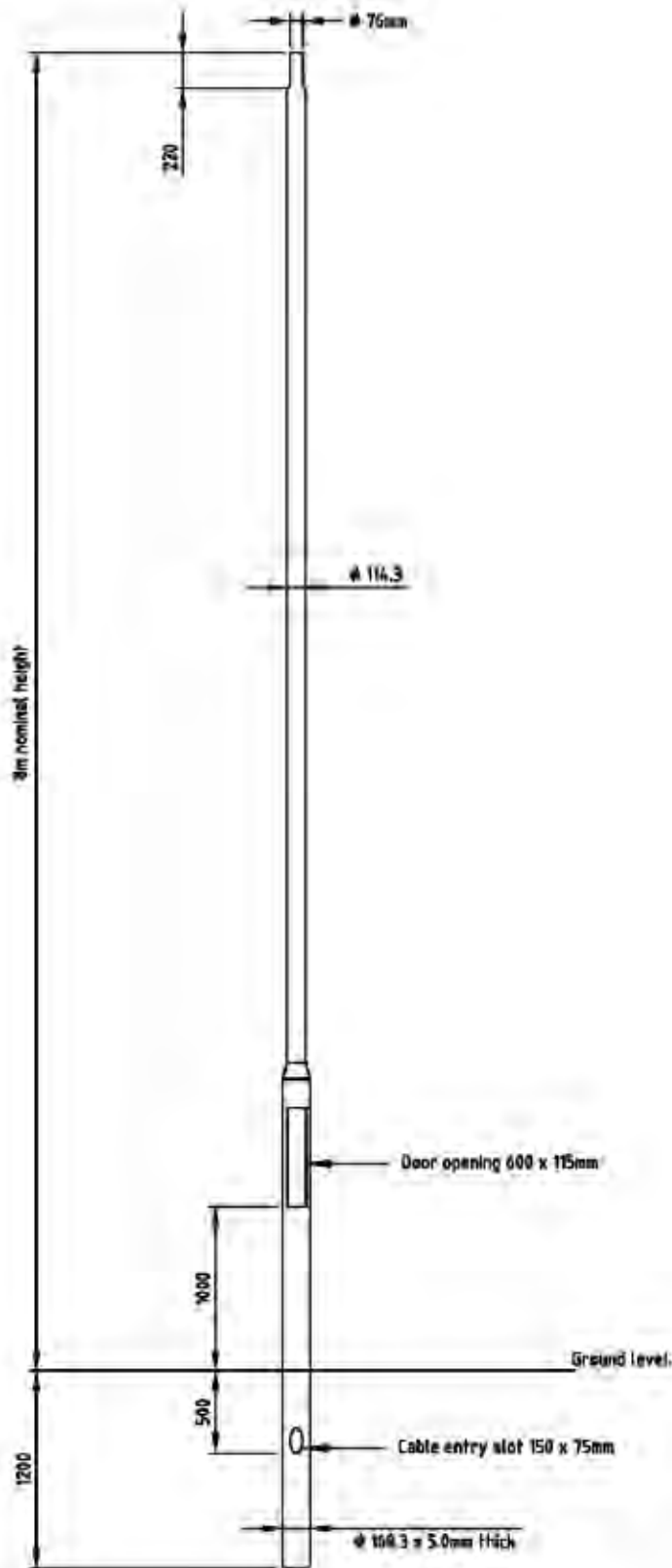
Drawing Number	Rev
HMEP/1300/01	1

NOTES:

- All dimensions in millimetres unless otherwise shown.

KEY

x = 800mm @ 5m or 1000mm @ 6m



Drawing Title
**LIGHTING STANDARD DETAILS
 8 METRE TUBULAR STEEL
 COLUMN (POST TOP)**

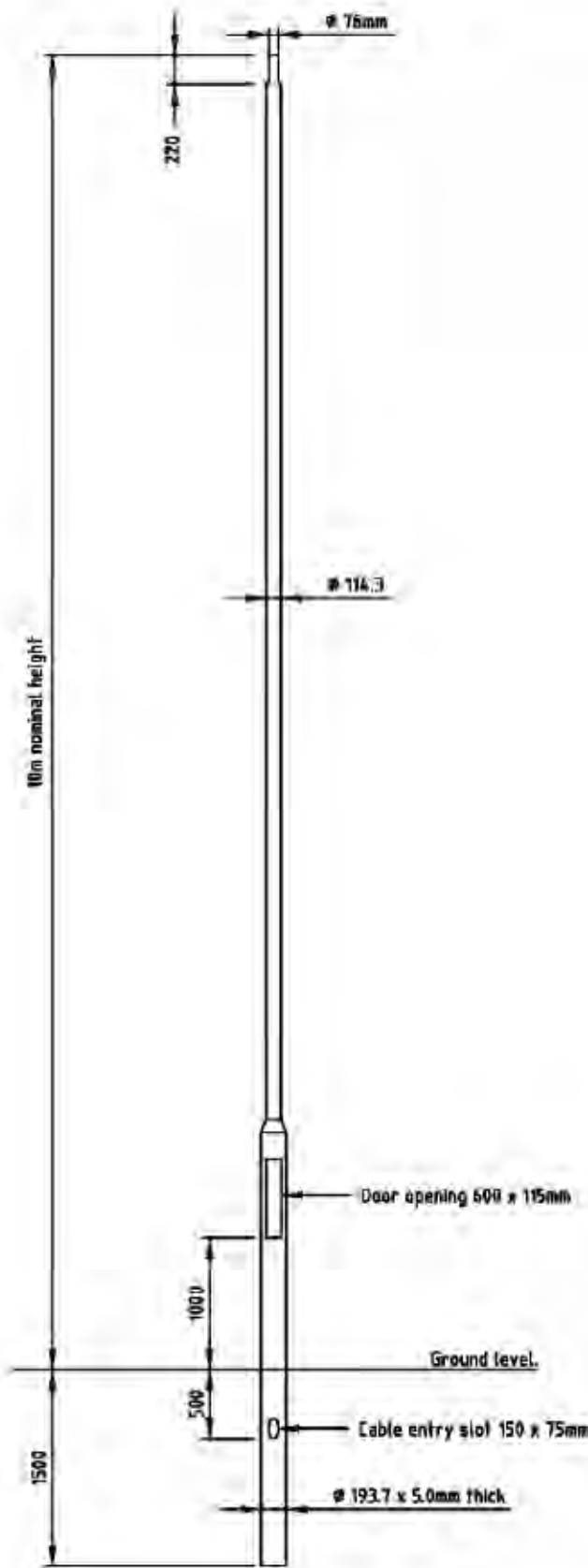
Scale \odot A4
 N.T.S.

Designed	Drawn SA	Checked JRB
Approved SJS		Date 04:10:12

Drawing Number HMEP/1300/02	Rev 1
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Notes

- All dimensions in millimetres unless otherwise shown.



Drawing Title
LIGHTING STANDARD DETAILS
10 METRE TUBULAR STEEL
COLUMN (POST TOP)

Scale \odot A4
 N.T.S.

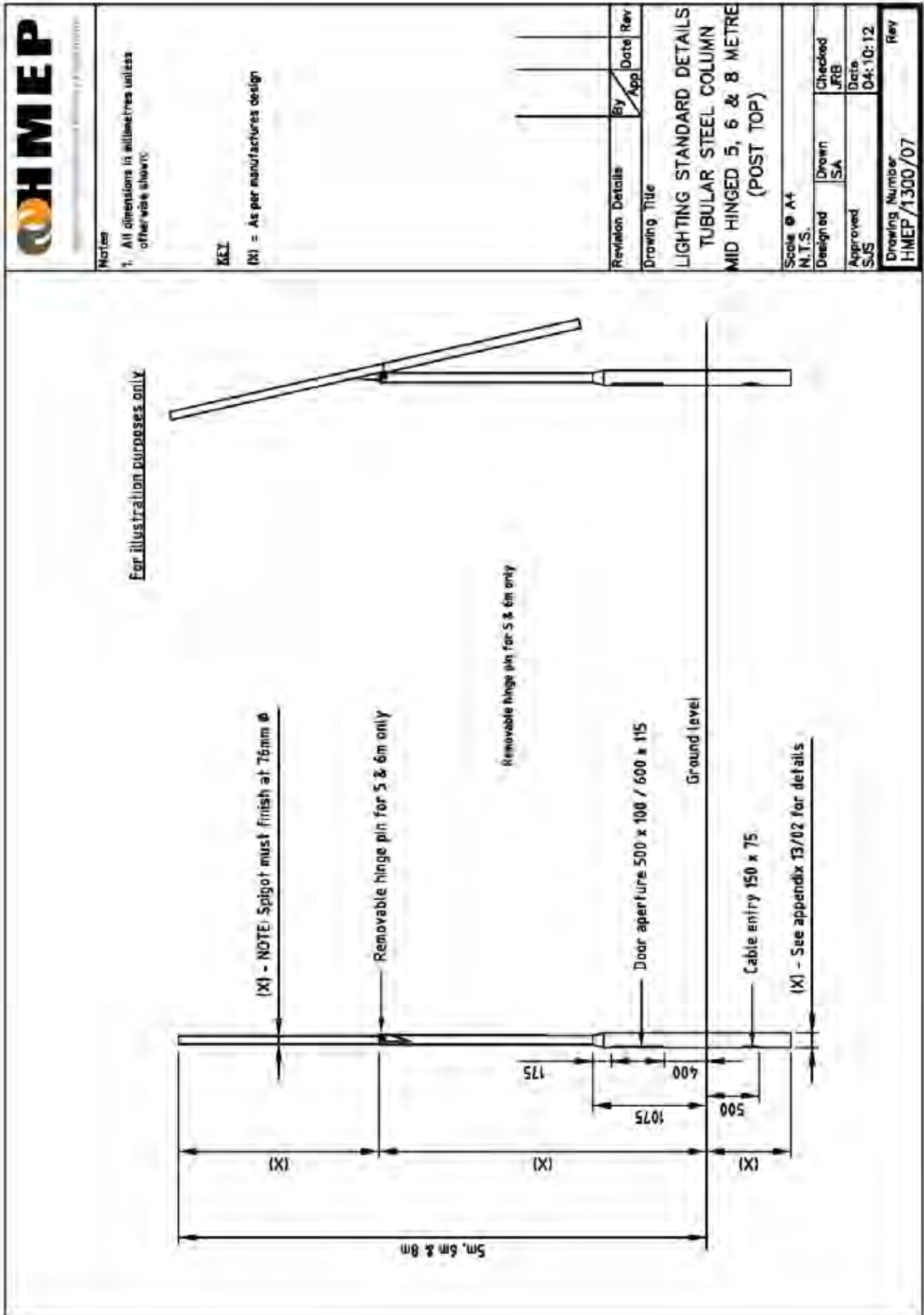
Designed	Drawn	Checked
	SA	JRB

Approved	Date
SJS	04:10:12

Drawing Number	Rev
HMEP/1300/03	1

Notes

1. All dimensions in millimetres unless otherwise shown.





Drawing Title
LIGHTING STANDARD DETAILS
TUBULAR STEEL—
STEEL BASE HINGED
5, 6, 8 & 10 METRE

Scale © A4
 N.T.S.

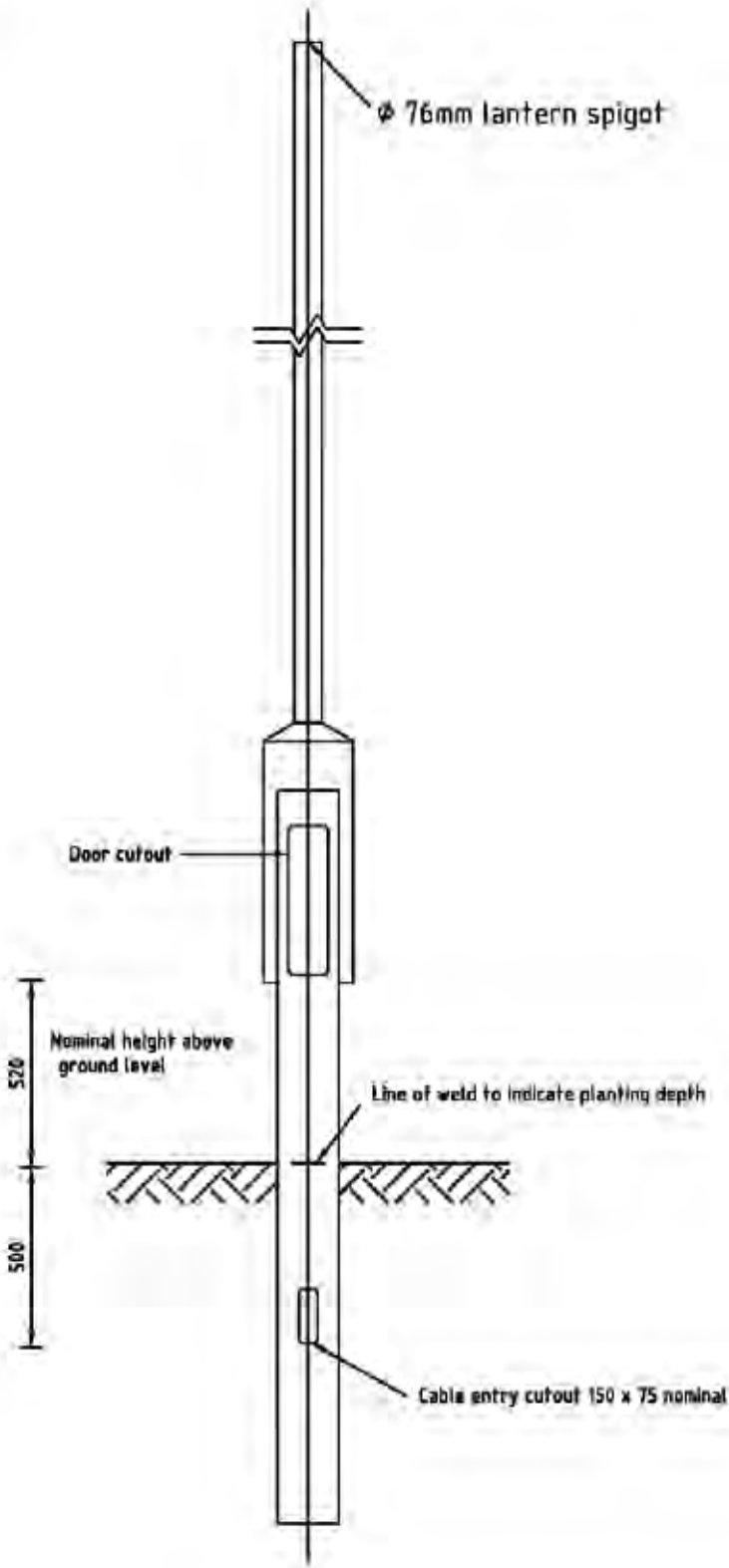
Designed	Drawn	Checked
	SA	JRB

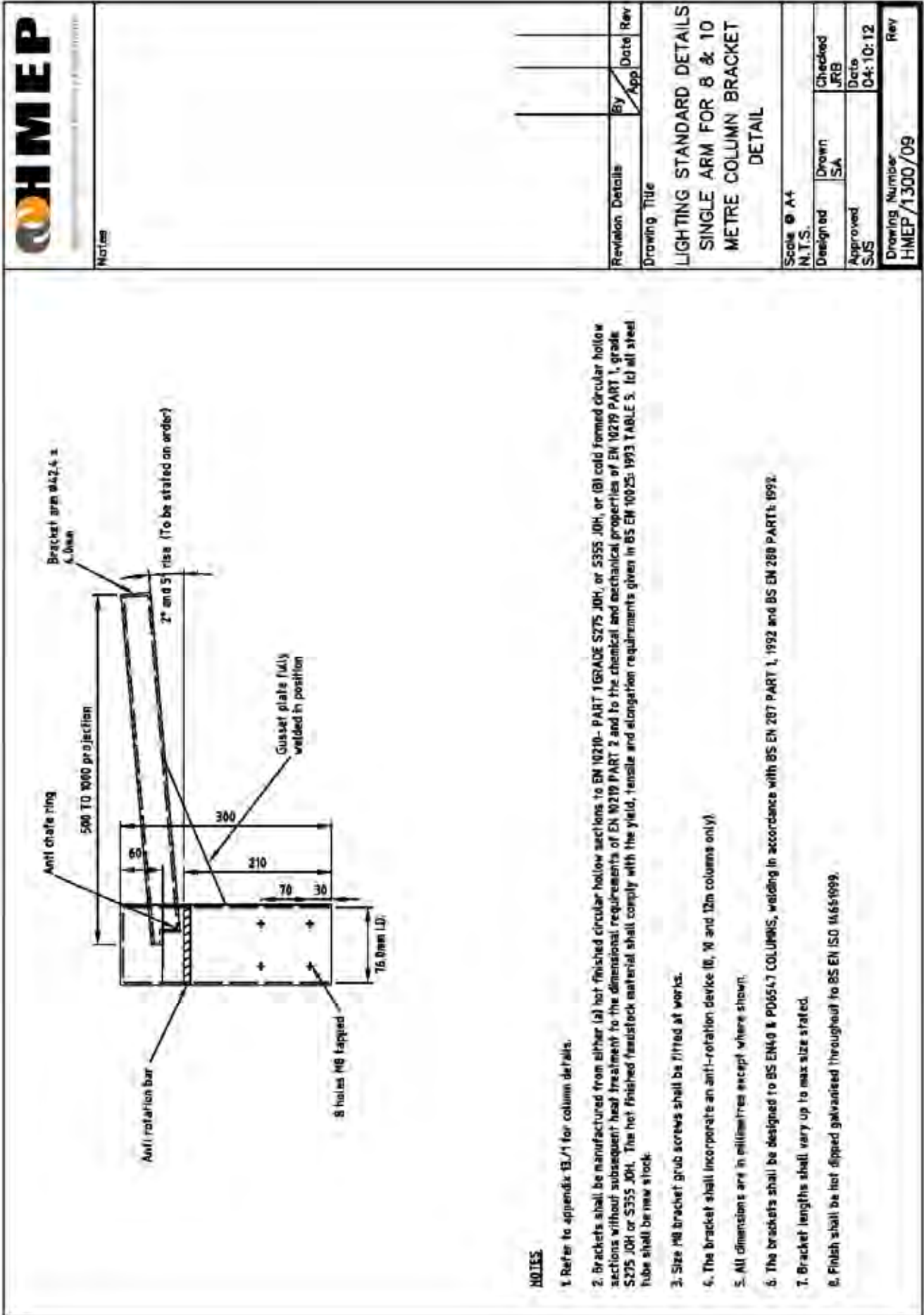
Approved	Date
SJS	04:10:12

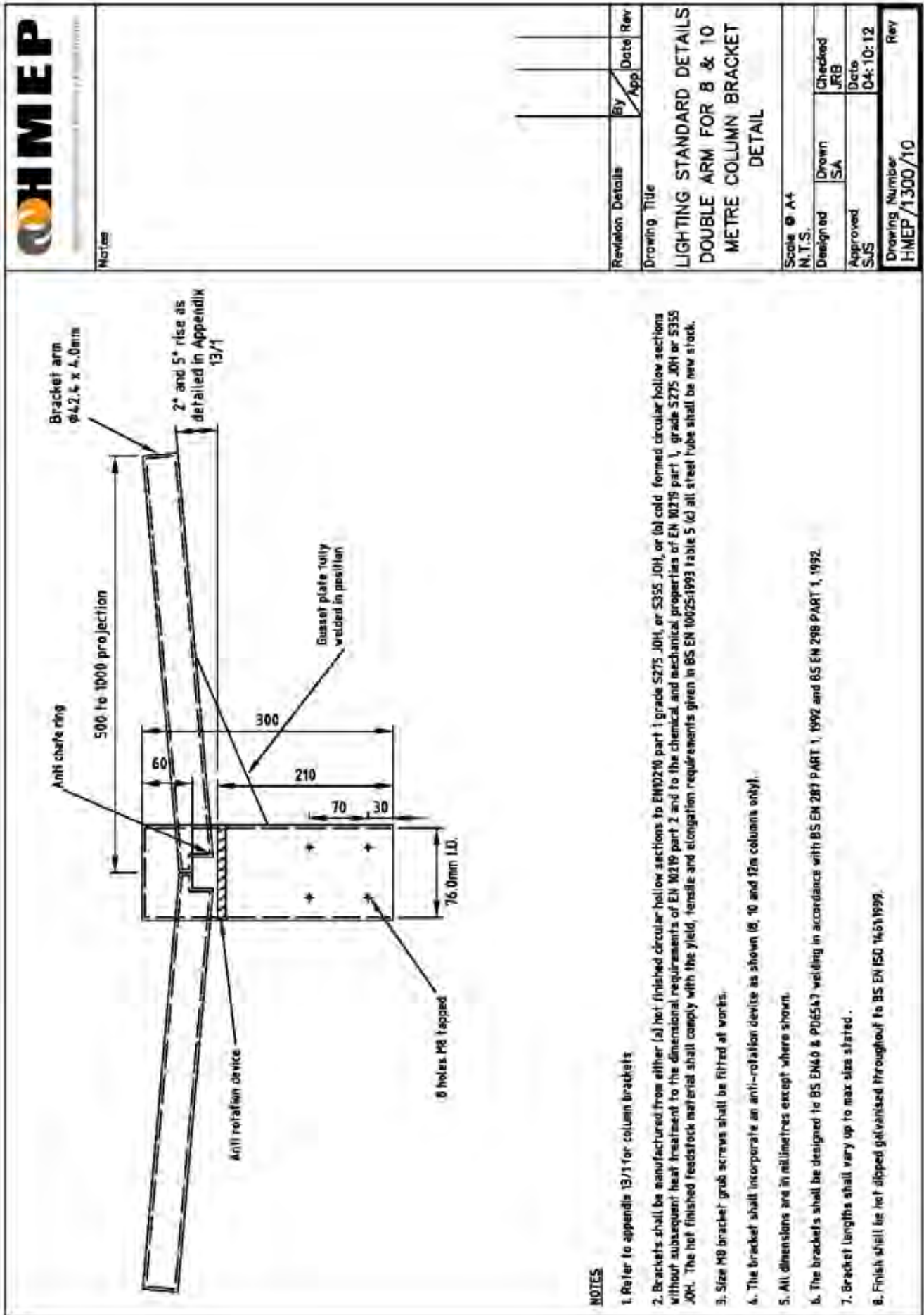
Drawing Number	Rev
HMEP/1300/08	1

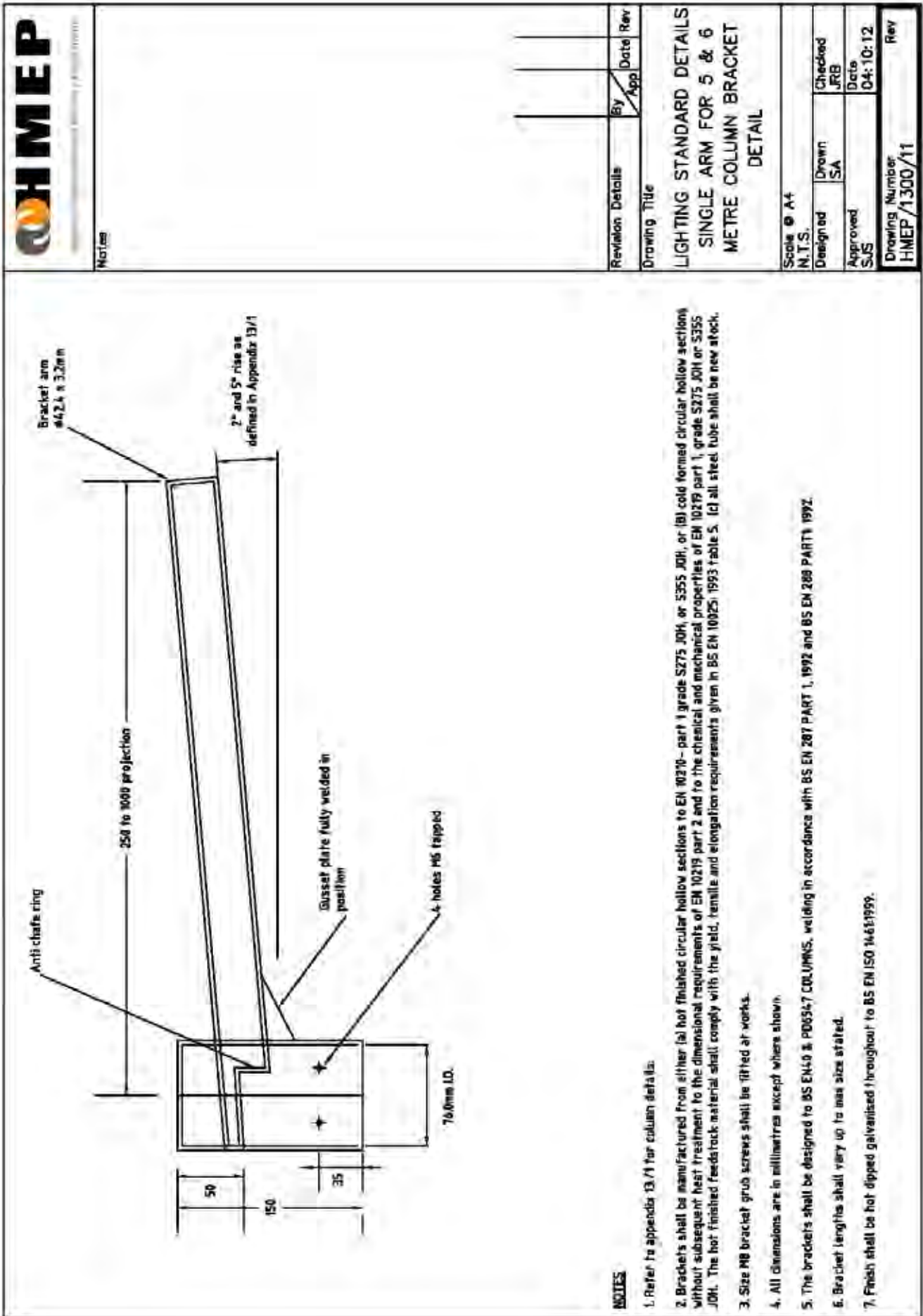
NOTES:-

1. All dimensions are in millimetres unless otherwise shown, indicative layout.
2. Design to comply with BSEN40 + PD6547.
3. Columns as per manufacturers specification.









NOTES

1. Refer to appendix 13/1 for column details.
2. Bracket's shall be manufactured from either (a) hot finished circular hollow sections to EN 10210 - part 1 grade S275 J0H, or S355 J0H, or (B) cold formed circular hollow sections without subsequent heat treatment to the dimensional requirements of EN 10219 part 2 and to the chemical and mechanical properties of EN 10219 part 1, grade S275 J0H or S355 J0H. The hot finished feedstock material shall comply with the yield, tensile and elongation requirements given in BS EN 10025:1993 Table 5. (c) all steel tube shall be new stock.
3. Size M6 bracket grub screws shall be fitted at works.
4. All dimensions are in millimetres except where shown.
5. The brackets shall be designed to BS EN4.0 & PD554.7 COLUMNS, welding in accordance with BS EN 287 PART 1, 1992 and BS EN 288 PART 1 1992.
6. Bracket lengths shall vary up to max size fitted.
7. Finish shall be hot dipped galvanised throughout to BS EN ISO 14-61:1999.



Notes

Revision	Details	By	App	Date	Rev

Drawing Title
**LIGHTING STANDARD DETAILS
 SINGLE ARM FOR 5 & 6
 METRE COLUMN BRACKET
 DETAIL**

Scale @ A4
 N.T.S.

Designed	Drawn	Checked
	SA	JRB
Approved		Date
SJS		04:10:12

Drawing Number
HMEP/1300/11

Rev

NOTES

1. Refer to appendix 13 / 1 for column details.
2. Adaptors shall be manufactured from either (a) hot finished circular hollow sections to EN 10210- part 1 grade S275 J0H, or S355 J0H, or (B) cold formed circular hollow sections without subsequent heat treatment to the dimensional requirements of EN 10219 part 2 and to the chemical and mechanical properties of EN 10219 part 1, grade S275 J0H or S355 J0H. The hot finished feedstock material shall comply with the yield, tensile and elongation requirements given in BS EN 10025: 1993 Table 5. (c) all steel tube shall be new stock.
3. Size M8 bracket grub screws shall be fitted at works.
4. All dimensions are in millimetres except where shown.
5. The brackets shall be designed to BS EN 40, welding in accordance with BS EN 287 PART 1, 1992 and BS EN 288 part 1: 1992.
6. Finish shall be hot dipped galvanised throughout to BS EN ISO 1461:1999.

Notes

Revision Details	By	App	Date	Rev


Drawing Title
**LIGHTING STANDARD DETAILS
 POST TOP MOUNTED
 SPIGOT ADAPTOR FOR
 8 & 10 METRE COLUMN**

Scale: $\text{A}+$
 N.T.S.

Designed	Drawn	Checked	
SJS	SA	JRB	
Approved	Date		
	04:10:12		

Drawing Number
HMEP/1300/12

Rev



HMEP
HAWAIIAN MAINTENANCE CONTRACT PROGRAM

Notes
This detail shows typical arrangements.

- When trade marks are used they shall also appear at the top of column and bracket data sheets.
- Identification format shall be year/manufacturer/data sheet No.
- Inscriptions shall be 7mm min high lettering or non-corrodible material or hand stamped.
- Column identification label to figure 1 shall be provided and fixed at the base compartment of the column.
- Bracket identification label to figure 2 with detachable fixing shall be fixed to bracket spigot.
- When a bracket is fixed to a column the bracket identification label shall be permanently attached to column identification label.

Revision Details	By	App	Date	Rev
Drawing Title				

**LIGHTING STANDARD DETAILS
COLUMN AND BRACKET
MANUFACTURER
IDENTIFICATION LABELS**

Fixed to earth terminal in column base compartment




FIG. 1 COLUMN IDENTIFICATION LABEL

Year of production

Name of manufacturer or patented trade mark (See note 2)

Unique code reference relating to bracket projection (relating to the appropriate column and bracket data sheet including revision No.)




FIG. 2 BRACKET IDENTIFICATION LABEL

Scale: A+
N.T.S.

Designed	Drawn	Checked
SJS	SA	JRB
Approved	Date	
	04:10:12	

Drawing Number: HMEP/1300/19 Rev

ABBREVIATIONS USED

ADEPT	Association of Directors of Environment, Economy, Planning and Transport http://www.adeptnet.org.uk/
APSE	Association for Public Service Excellence http://www.apse.org.uk/
BBA	British Board of Agreement http://www.bbacerts.co.uk/
DMRB	Design Manual for Roads and Bridges http://www.dft.gov.uk/ha/standards/dmr/b/index.htm
HAPAS	Highway Authorities Product Approval Scheme http://www.bbacerts.co.uk/product-approval/hapas.aspx
HCD	Highways Construction Details – Volume 3 of the Manual of Contract Documents for Highways Works http://www.dft.gov.uk/ha/standards/mchw/vol3/index.htm
HTMA	Highways Term Maintenance Association http://www.htma.co.uk/
LHAs	Local Highways Authorities
LoTAG TAG	London Technical Advisers Group Technical Advisers Group http://www.lgtag.com/
MCHW	Manual of Contract Documents for Highway Works http://www.dft.gov.uk/ha/standards/mchw/index.htm
NG	Notes for Guidance on the Specification for Highway Works - Volume 2 of the Manual of Contract Documents for Highways Works http://www.dft.gov.uk/ha/standards/mchw/vol2/index.htm
SHW	Specification for Highways Works- Volume 1 of the Manual of Contract Documents for Highways Works http://www.dft.gov.uk/ha/standards/mchw/vol1/index.htm
TfL	Transport for London
W-mH	Well-maintained Highways UK Roads Liaison Group – Well - Maintained Highways

Unless specifically defined otherwise the definitions of terms used in this document are those in BS 6100, Glossary of Building and Civil Engineering Terms.

TECHNICAL ABBREVIATIONS USED

AAV	Aggregate Abrasion Value
BBA	British Board of Agrément
BRE	Building Research Establishment Ltd
BS	British Standard
BSI	British Standards Institution
CBM	Cement Bound Material
CBR	California Bearing Ratio
CP	British Standard Code of Practice
EN	European Standard
HAPAS	Highway Authorities' Product Approval Scheme
HCD	Highway Construction Details
HMSO/TSO	Her Majesty's Stationery Office/The Stationery Office
ISO	International Organization for Standardization
MDPE	Medium Density Polyethylene
NG	Notes for Guidance on the Specification for Highway Works
PC	Portland Cement
PSV	Polished Stone Value
PVC	Polyvinyl Chloride
SHW	Specification for Highway Works
SI	Statutory Instrument
UKAS	United Kingdom Accreditation Service
PVC-U	Un-plasticised Polyvinyl Chloride