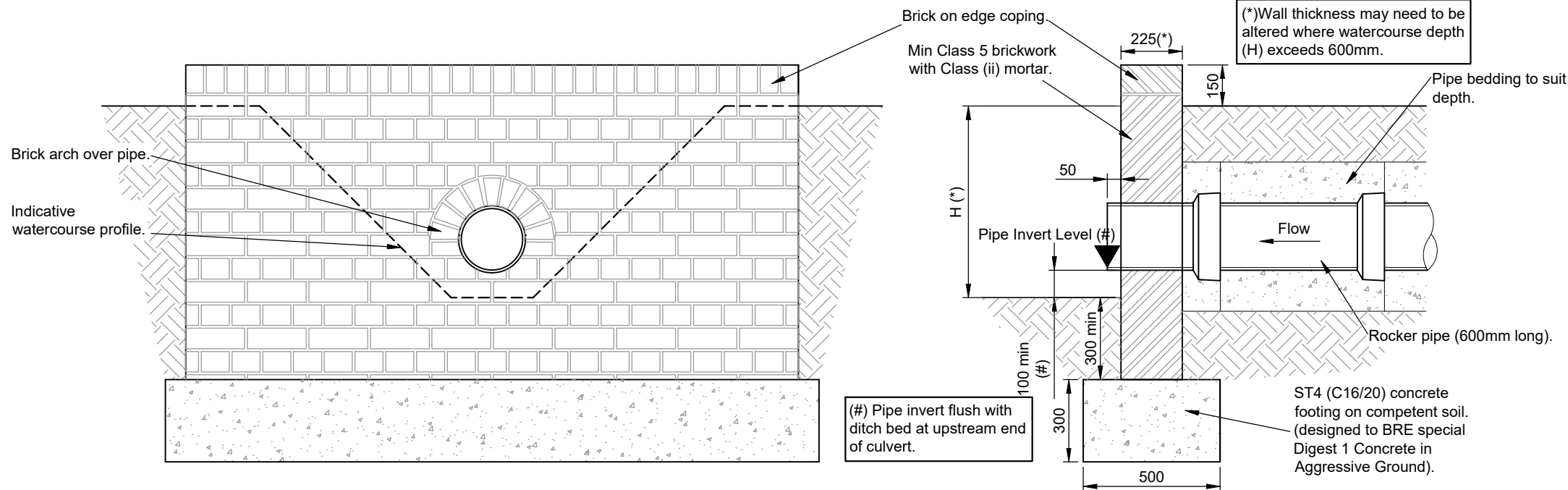


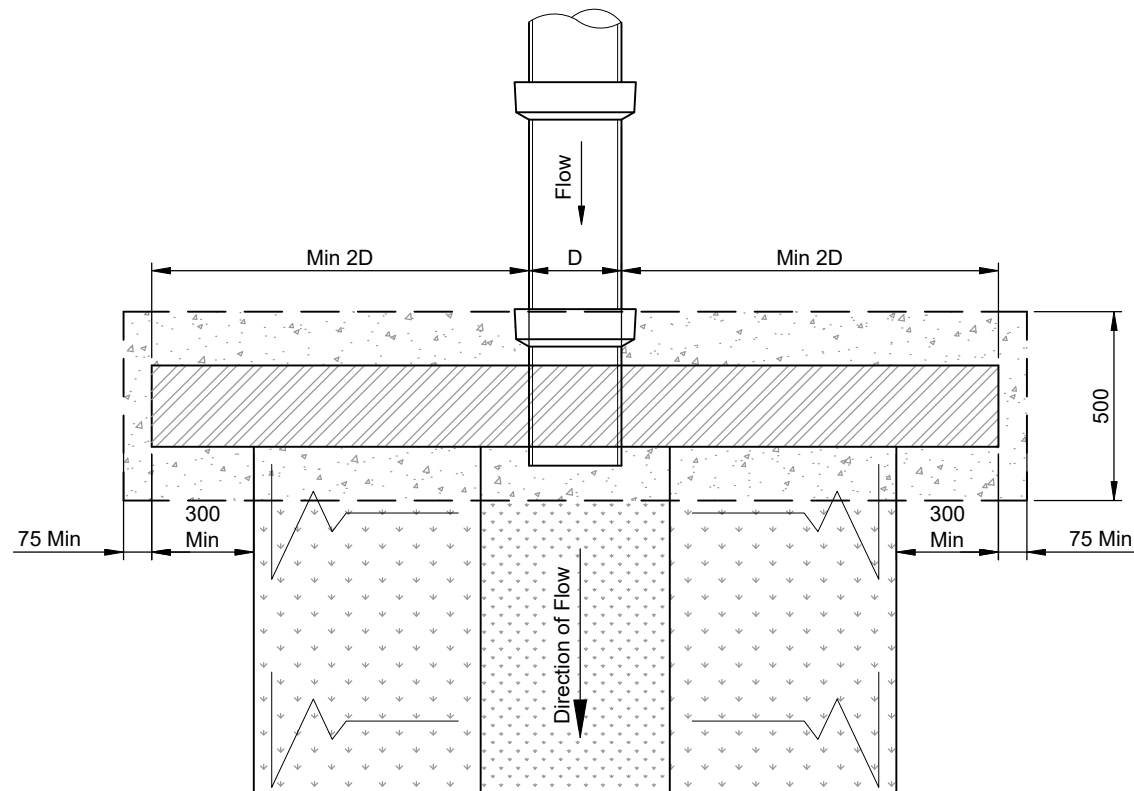


SIMPLE HEADWALL ELEVATION (Scale 1:20)

SIMPLE HEADWALL SECTION (Scale 1:20)

- NOTES
- Headwall design may need to be adjusted to on site conditions following approval from WSCC Inspector.
 - For vehicular crossings of ditches pipes shall be min 450mm diam and be set to invert of ditch. Ditch to be regraded to achieve satisfactory falls.
 - For H>600 appropriate vehicular or pedestrian containment shall be installed.
 - All exposed pipework to be UV stable.

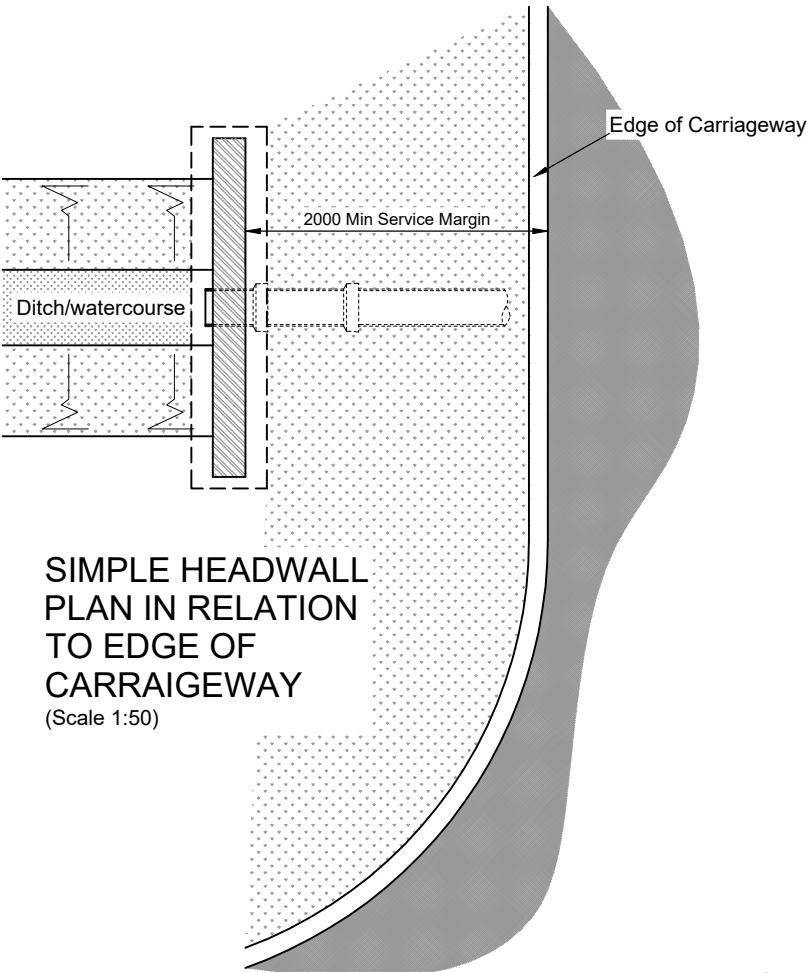
- Set back distances shown are considered to be the minimum. Headwall position in relation to carriageway shall consider the following:
- Set back dimension relative to road speed
 - Requirement for guarding vehicular/pedestrian
 - RRRAP and/or other Designer Risk Assessment
 - Ditch dimensions, depth and side slopes



SIMPLE HEADWALL PLAN (Scale 1:20)

- CONDITIONS OF USE.
- Low key driveway/road crossings with low traffic flows.
 - Watercourses with low flow rates/velocities.
 - Head of watercourses (not gully outlets).
 - Minimum pipe size 225mm.
 - Maximum pipe size 450mm.
 - Foundation dimensions are based on good ground conditions (bearing capacity >150KPa) without groundwater pressure. Headwalls to be installed in poor ground condition and/or high groundwater may require design by structural engineer.
 - Compliance with West Sussex LLFA Culvert Policy.
 - Land Drainage Consent to be obtained before any works to/in watercourses is carried out.
 - This detail may not be suitable for use in Main Rivers.

- PIPE GRILLES.
- Designer shall consider the use of pipe grilles for pipes in excess of 350mm diameter.
- GUARDING.
- Designer shall consider the need to provide pedestrian guarding and vehicular safety barriers (VRS).



SIMPLE HEADWALL PLAN IN RELATION TO EDGE OF CARRAIGEWAY (Scale 1:50)

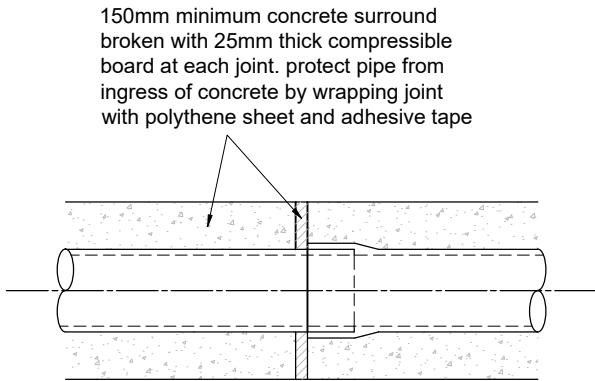
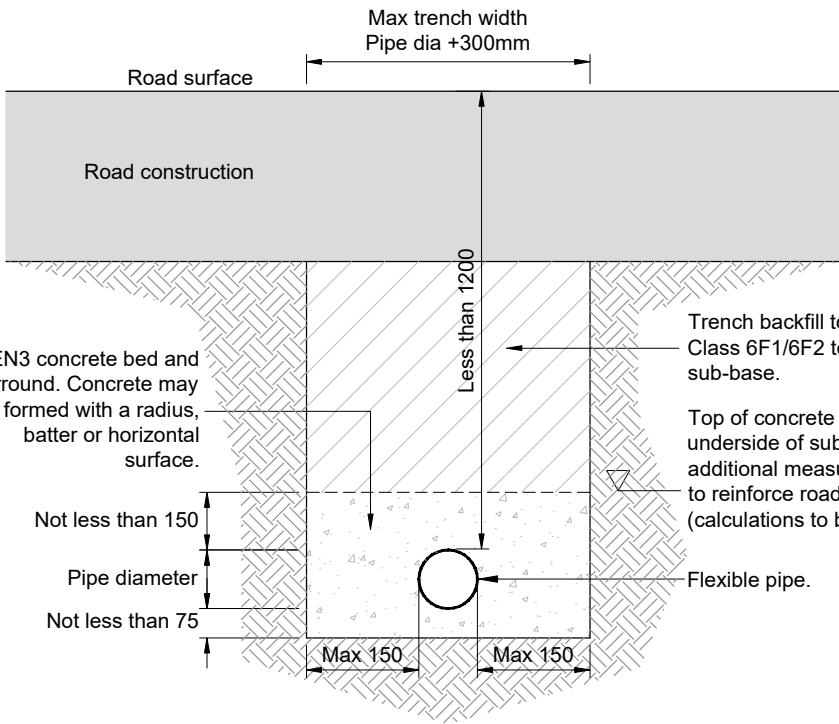
A	General update	MJA	MJA	15.03.19
Rev	Revision details	Chkd	Appd	Date
Drawn:	ldf			For comment
Chkd:	mja			For tender
Appd:	AH	X		For construction
Date:	NOV 2017			As constructed
File ref:				
IWP Ref:				

West Sussex County Council
Infrastructure Group
County Hall,
West Street
Chichester
West Sussex
PO19 1RH
(01243) 642105

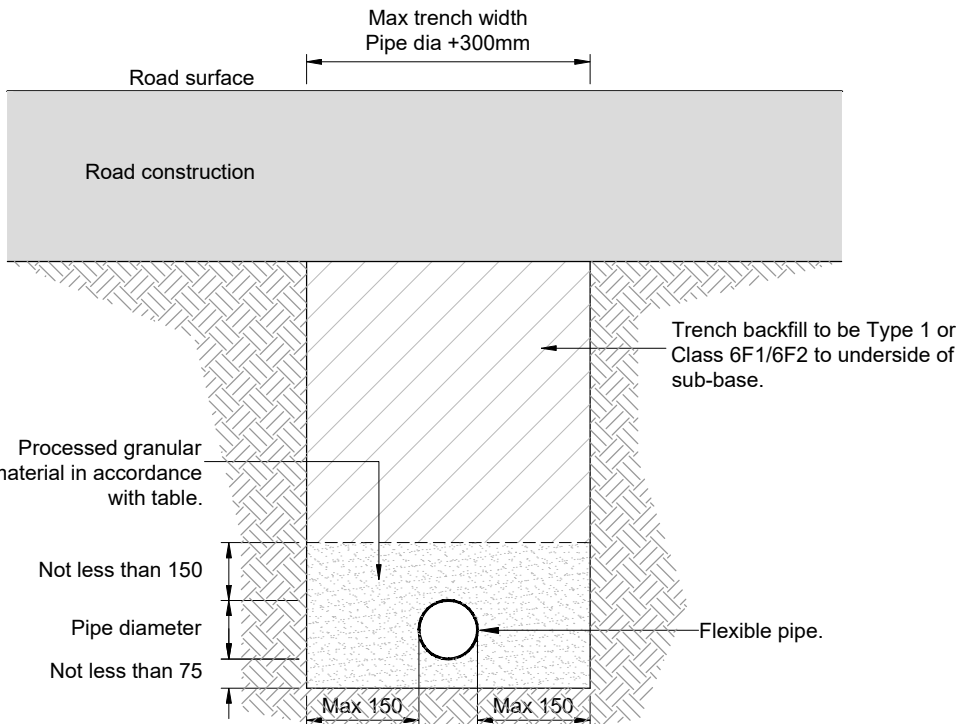


Project Name	Section 278/38 Highway Agreement Standard Details
Drawing Title	Simple Headwall Detail for pipe sizes up to 450 diam Engineering Brickwork

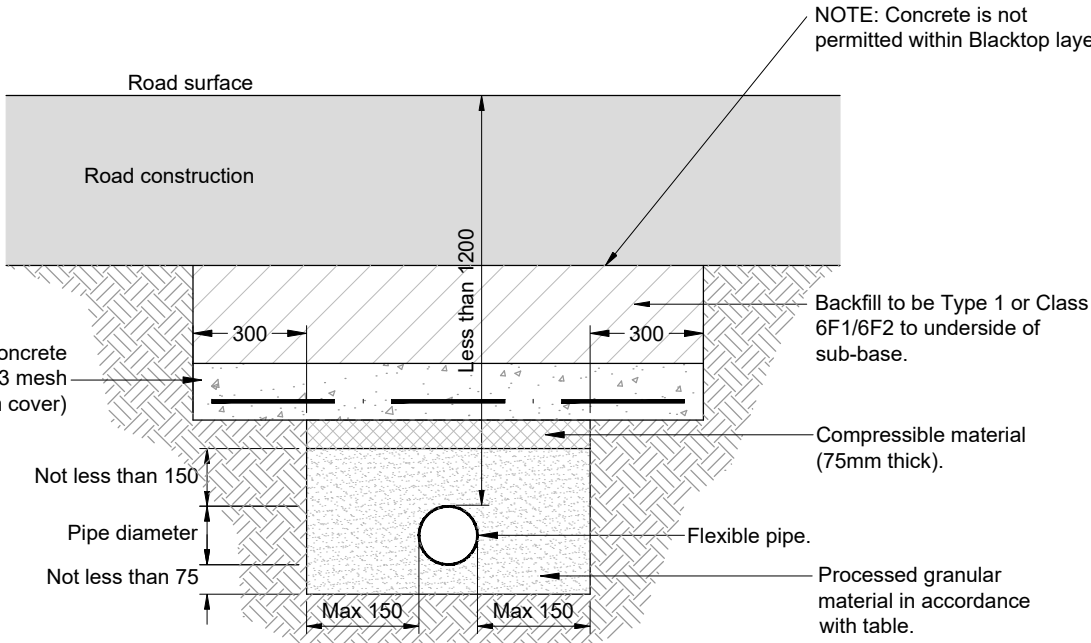
APPROVED March 2019 CONTRACTOR TO ENSURE LATEST DETAILS ARE USED	
Original Drawing Size :	A3
Scale :	1:20 / 1:50
Dimensions :	mm
Drawing No.	Rev
S278/38/32	A



CONCRETE PIPE BEDDING AND SURROUND
TYPE Z
(Depth of cover to pipe less than 1.2m)



GRANULAR PIPE BEDDING AND SURROUND
TYPE S
(Minimum depth of cover to pipe 1.2m)



CONCRETE SLAB PIPE PROTECTION
(Depth of cover to pipe less than 1.2m
and/or
Where top of concrete would encroach into the road construction sub-base layer)

TABLE 1.

Internal pipe dia (mm)	Bedding Material Size (mm)
150	10 or 14 nominal single size or 14 to 5 graded
Over 150 to 300	10, 14 or 20 nominal single size or 14 to 5 graded or 20 to 5 graded
Over 300 to 550	14 or 20 nominal single size or 14 to 5 graded or 20 to 5 graded
550 to 900	14 , 20 or 40 nominal single size or 14 to 5 graded or 20 to 5 graded or 40 to 5 graded
Over 900	STRUCTURES Pipes with a diameter of 0.9m or greater are classified as a structure and will be subject to review by the WSCC structures team.

To include aggregates to BS 882, air cooled blastfurnace slag, to BS1047 and lightweight aggregates to BS 3797 (Air cooled blastfurnace slag and lightweight aggregates not permitted for ductile iron pipes), recycled materials to BS8500-2.

Maximum CF value 0.15

For ferrous and cementitious pipeline materials sulphate content of bedding material must not be greater than 0.3% as sulphur trioxide.

Where drainage is installed in Filled ground the designer shall ensure measures are taken to control settlement.

Where drainage is installed in contaminated ground the designer shall provided specific details to be agreed with WSCC.

Where drainage is installed in soft ground the designer shall ensure measures are taken to prevent migration of pipe bedding material in to the surrounding soil and vice versa.

Refer to Manual for Contract Documents for Highways Volume 3 - Highway Construction Details for pipelines installed under A roads

- NOTES
- Do not scale from this drawing.
 - Openings in existing highways shall be reinstated in accordance with the current version of Specification for Reinstatement of Openings in Highways published by HAUC.
 - Refer to drawing 11 for pipe selection.

A	General update	MJA	MJA	15.03.19
-	Initial Issue	DLS	MJA	07.11.17
Rev	Revision details	Chkd	Appd	Date
Drawn:	LDF			For comment
Chkd:				For tender
Appd:				For construction
Date:				As constructed
File ref:				
IWP Ref:				

West Sussex County Council
Infrastructure Group
County Hall,
West Street
Chichester
West Sussex
PO19 1RH
(01243) 642105



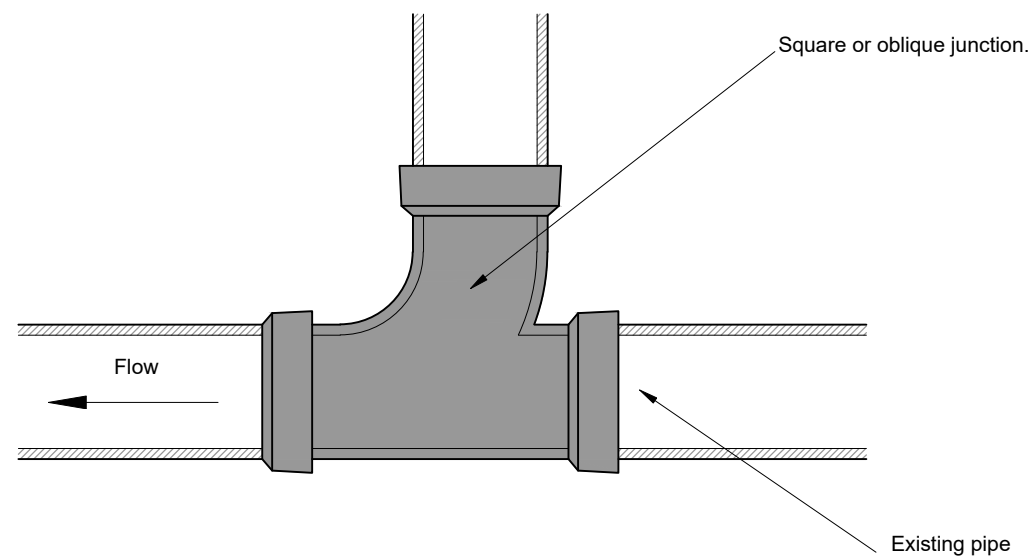
west
sussex
county
council

Project Name
Section 278/38 Highway Agreement
Standard Details

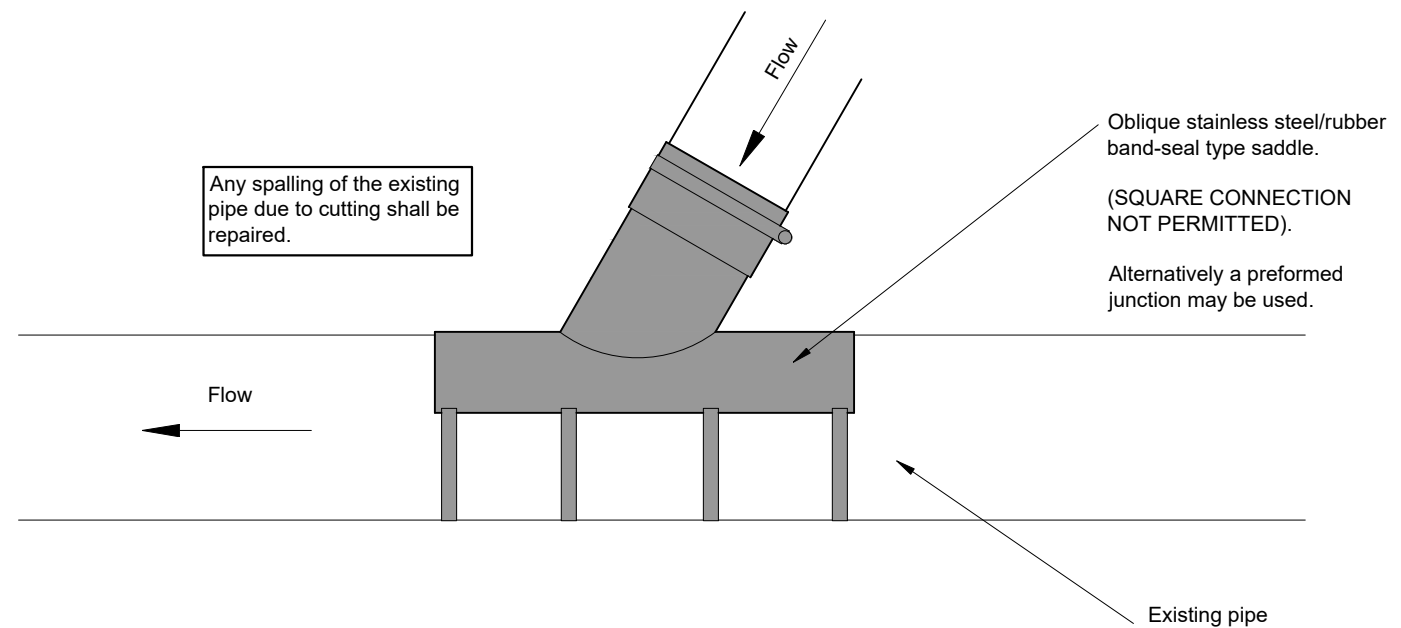
Drawing Title
Drainage
Pipe Bedding Details



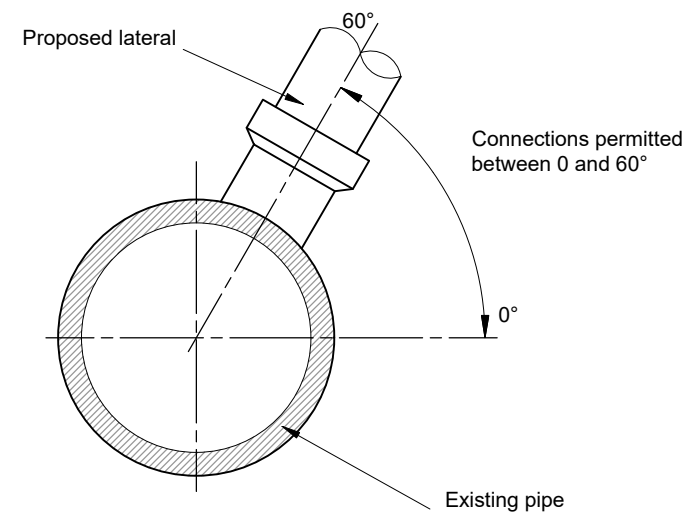
Original Drawing Size :	A3
Scale : As Shown	Dimensions :
Drawing No. S278/38/33	Rev A



CONNECTION TO SAME SIZE DIAMETER
PIPE
(PLAN)
(1:10)



CONNECTION TO AN EXISTING LARGER
DIAMETER SMOOTH WALL PIPE
(PLAN)
(1:10)



ACCEPTABLE CONNECTION LOCATION
(SECTION)
(1:10)

Saddles where the connecting lateral protrudes or has the potential to protrude in to the main pipe will not be permitted.

Connections of pipes of the same diameter must be made using preformed junctions at greater than 90 deg to the main flow.

Connections between new pipes shall be made using preformed pipe junctions. Saddles will not be permitted to connect new laterals to new pipelines.

Condition of existing pipe to which the connection is proposed shall be assessed. If the existing pipe is damaged a sufficient length (as directed by the highway inspector) shall be replaced to ensure a satisfactory connection.

Where pipeline are installed in contaminated soil the designer shall ensure that material specified are resistant to any chemicals that may be present.

NOTES

1. Do not scale from this drawing.
2. Openings in existing highways shall be reinstated in accordance with the current version of Specification for Reinstatement of Openings in Highways published by HAUC.

A -	General update Initial Issue	MJA DLS	MJA MJA	15.03.19 07.11.17	West Sussex County Council Infrastructure Group County Hall, West Street Chichester West Sussex PO19 1RH (01243) 642105  west sussex county council	Project Name					
Rev	Revision details	Chkd	Appd	Date		Section 278/38 Highway Agreement Standard Details					
Drawn: LDF			For comment			Drawing Title Drainage Lateral Connections			Original Drawing Size : A3		
Chkd:			For tender						Scale : As Shown		Dimensions :
Appd:			For construction						Drawing No. S278/38/36		Rev A
Date:			As constructed								
File ref: IWP Ref:											

Appendix C– Copy of Application for Ordinary Watercourse Land Drainage Consent



West Sussex Flood Risk Partnership

Application for Ordinary Watercourse Land Drainage Consent [1a]

Introduction

Before completing this form you are recommended to contact us for advice on your proposal.

Please read through the guidance notes and the application form carefully before you fill the form in.

It should take you about 20 mins to fill in this form and it can be completed online

If you are not sure about anything in this form, contact your Local District or Borough Council using the details at the bottom of this form.

Contents

- 1.About you, the applicant
- 2.Your address
- 3.Agent or Consultants details
- 4.Interest in the Land
- 5.Location of Work
- 6.Description and Purpose of Proposed Work
- 7.Plans and Sections
- 8.Construction Details
- 9.Environment Agency Interests
- 10.Planning Approvals
- 11.Maintenance of Structure
- 12.Effects on the Environment
- 13.Fees
- 14.Checklist
- 15.Declaration

1 The Applicant

Are you applying as a company, an individual, a group of individuals (partnership) or a public body? Please tick the appropriate box.

- | | | |
|----------------------|-------------------------------------|-------------------|
| Company | ☒ | Go to section 1.1 |
| Individual | ☐ | Go to section 1.2 |
| Group of individuals | ☐ | Go to section 1.3 |
| Public body | ☐ | Go to section 1.4 |

1.1 Applications from companies

To apply as a company, you must be formally registered with Companies House. Please see Companies House website for more information.

Company name, as registered with Companies House

LIDL GREAT BRITAIN LIMITED

Company registration number

02816429

Office address registered with Companies House

Address

LIDL GREAT BRITAIN LIMITED

FOXES PARK

BROWNHILL WAY

NURSLING, SOUTHAMPTON

Postcode SO6 0AW

Country UK

Contact telephone numbers, including the area code

Phone +44 (0) 2380 742585
Mobile +44 (0) 7984 591196
Email Victoria.Burton@lidl.co.uk

Now go straight to section 3.

1.2 Applications from individuals

Give your full name.

Title (Mr, Mrs, Miss etc) _ _ _ _

First name _ _ _ _ _

Last name _ _ _ _ _

Now go straight to section 2.

1.3 Applications from groups of individuals

What type of group are you?

Charity ☐

Group of individuals ☐

Club ☐

Partnership ☐

Other ☐

Name of your group

_ _ _ _ _

Give details of your group's main representative

Title (Mr, Mrs, Miss etc) _ _ _

First name _ _ _ _ _

Last name _ _ _ _ _

Position _ _ _ _ _

Now go straight to section 2.

1.4 Applications from public bodies

Name of the public body

What type of public body are you?

2 Your address

If you are applying as an individual, group of individuals or public body, please fill in 2.1 below.

2.1 Your main UK address

Address

Postcode

Contact telephone numbers, including the area code

Phone

Mobile

Email

3 Agent or Consultant Contact details (where appropriate)

3.1 Who we can contact about your application

This can be you or someone acting as a consultant or an agent for you during your application process.

Title (~~Mr~~, Mrs, Miss etc)

First name

Last name

Position

Address

RAMBOLL

CARLTON HOUSE

RINGWOOD ROAD, WOODLANDS

NETLEY MARSH

Postcode

Country

Contact numbers, including the area code

Phone

Mobile

Email cynthia.congerthompson@ramboll.co.uk

4. Your Interest in the Land

4.1 What is your interest in the Land?

Landowner

☒

Tenant

☐

Other

☐

Please specify

5 Location of the Proposed Works

5.1 What is the Location of the Proposed Works? (Please provide a plan clearly showing the location)

LAND AT PHASE 1A, OLDLANDS FARM,
SHIRPNEY ROAD, BOGNOR REGIS, PO22
9NN

5.2 Name of River or Watercourse (If known)

OLDLANDS FARM DITCH

5.3 National Grid Reference of the Site (to 12 figures)

SU 9423101651

6 Description and purpose of the proposed works

6.1 Please provide a description of the proposed works (please attach separate sheets if required)

SURFACE WATER DRAINAGE DISCHARGE OF
OLDLANDS FARM PHASE 1A LIDL PLOT AT
GREENFIELD RUN-OFF RATES INTO
EXISTING OLDLANDS FARM DITCH
SITUATED IN THE NORTH EAST OF THE
DEVELOPMENT SITE

6.2 Number of Structures

1 NO. PROPOSED OUTFALL
CONNECTION

7 Plans and Sections:

7.1 Please provide a description and reference number of all plans and sections you have provided (see the guidance notes). Please attach separate sheets if required

1620003993-RAM-0100-01A-DR-CR-20001

1620003993-RAM-0500-01A-DR-CR-20001

1620003993-RAM-0500-01A-DR-CR-20002

1620003993-RAM-0500-01A-D-CR-20101

8 Construction Details

8.1 Are the works permanent or Temporary?

Permanent

☒

Temporary,

☐ if so;

for how long?

8.2 Date Construction Work is proposed to start?

Date (DD/MM/YYYY)

01/10/2020

9 Environment Agency Interests

9.1 Do the proposed works involve or affect the following?

Impounding (holding back a watercourse) ☐

Abstracting (removing) Water ☐

Fish or fisheries ☐

Disposing of Waste Material ☐

Water Quality ☐

If yes, please contact the Environment Agency on 03708 506 506

10 Planning Approvals

Fill in this Section if you have been given planning permission for the proposed works. Otherwise go to Section 11.

10.1 Planning Authority

ARUN DISTRICT COUNCIL

10.2 Application Number

BE/12/19/PL

10.3 Approval Date

Date (DD/MM/YYYY): 18/03/2020

11 Maintaining the Structure

11.1 Name of Person or Organisation responsible for maintaining the structure

During Construction

LIDL GREAT BRITAIN LTD.

Upon Completion

ARUN DISTRICT COUNCIL

12 Effects on the Environment

12.1 Please attach brief details of any effects the work will have on the environment together with any proposals for improvements you will make or action you will take to mitigate/compensate for the effects.

NONE- SITE TO DISCHARGE AT GREENFIELD RATES, FLOW PATHS AND NATURAL DIRECTION OF DITCH RETAINED

13 Fees

Our Ordinary Watercourse Consent fees are set at £150 per structure or application and should be made out to the appropriate District or Borough Council; please contact us for any queries or multiple applications. Additional fees may be charged for complex / involved applications.

14 Checklist

Please read through this list and tick the items you are sending with this application.

Completed Form

☒

Any associated documents, plans and calculations

☒

Applicable Fee

☐

Environmental/Ecological Reports

☐

Method Statement

☐

The Data Protection Act 1998

We will process the information you provide so that we can deal with your enquiry.

We may also process or release the information to:

- offer you documents or services relating to environmental matters;
- consult the public, public organisations and other organisations (for example, the Health and Safety Executive, local authorities, the emergency services, Welsh Government
- carry out research into environmental issues and develop solutions to problems;
- provide information from the public register to anyone who asks;
- prevent anyone from breaking environmental law, investigate cases where environmental law may have been broken, and take any action that is needed;
- assess whether customers are satisfied with our service and improve it where necessary; and
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (taking into account any exemptions under the General Data Protection Regulation).

We may pass the information on to our agents or representatives to do these things for us.

15 Declaration

By signing below you are declaring that, as far as you know, the information given in this application, including the plan and any supporting documents, is true.

Signature



Title (~~Mr~~, ~~Mrs~~, Miss etc)

First name CYNTHIA

Last name CONGER-THOMPSON

Position DESIGN ENGINEER

Today's date 25/06/2020

Next steps

Please return this form together with any supporting documents to the Land Drainage Engineer, listed below, in which your application is located.

Adur and Worthing Council
Laura Gibbons
Telephone: 01903 221374
Email: laura.gibbons@adur-worthing.gov.uk
Address: The Town Hall, Chapel Road, Worthing, BN11 1HA

Arun District Council
Paul Cann
Telephone: 01903 737819
Email: Paul.Cann@arun.gov.uk
Address: Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

Chichester District Council
Paul Cann
Telephone: 01903 737819
Email: Paul.Cann@arun.gov.uk
Address: Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

Crawley Borough Council
John Braidley
Telephone: 01293 438596
Email: John.Braidley@crawley.gov.uk
Address: Town Hall, The Boulevard, Crawley RH10 1UZ

Horsham District Council
Martin Brightwell
Telephone: 01403 215063
Email: Martin.Brightwell@horsham.gov.uk
Address: Parkside, Chart Way, Horsham, RH12 1RL

Mid Sussex District Council
Fiona Bishop
Telephone: 01444 477074
Email: drainage@midsussex.gov.uk
Address: Oaklands Road, Haywards Heath, RH16 1SS

Please tell us if you have any communication needs such as needing information in a different language or alternative format (for example, in large print or in Braille)

Appendix D – Drainage and SUDs Operation & Maintenance Strategy

Intended for
Lidl Great Britain Ltd.

Document type
Drainage Maintenance Strategy

Date
June 2020

OLDLANDS FARM - PHASE 1A (LIDL PLOT) DRAINAGE AND SUDS OPERATION & MAINTENANCE STRATEGY

DRAINAGE AND SUDS OPERATION & MAINTENANCE STRATEGY

Revision **P01**
Date **06/07/2020**
Made by **Cynthia Conger-Thompson**
Checked by **Chris Leigh**
Approved by **Mark Dewson**
Description **Drainage Operation & Maintenance Strategy**

Ref 1620010196-RAM-H-RP-1A-0500-002

Ramboll
Carlton House
Ringwood Road
Woodlands
Southampton
SO40 7HT
United Kingdom
T +44 (0) 238 081 7500
F +44 (0) 845 299 1610
www.ramboll.co.uk

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Phase 1A (Lidl Plot) Drainage Maintenance Strategy.docx

CONTENTS

1.	INTRODUCTION	1
1.1	General Introduction	1
1.2	System synopsis	1
2.	ROUTINE INSPECTION AND MAINTENANCE SCHEDULE	3
2.1	Surface Water Drainage	3
2.2	Foul Water Drainage	4

APPENDICES

Appendix 1

FOUL AND SURFACE WATER DRAINAGE PLAN

1. INTRODUCTION

1.1 General Introduction

- 1.1.1 This document considers the surface water and foul water drainage systems for the Oldlands Phase 1A (Lidl Plot) development. A layout plan of the drainage systems is shown on Ramboll drawing 1620003993-RAM-0500-01A-DR-CR-20001 which is included as Appendix 1 to this report.

This document outlines each aspect of the surface water and foul water drainage systems, a brief description, issues to be aware of and any required maintenance. This document should form part of the Operation and Maintenance Manual for the scheme. The manual is to also include details of financial management and arrangements for the replacement of major components at the end of the manufacturer's recommended design life.

- 1.1.2 The balancing pond and SUDS system will be paid for through a service charge, administered by the landlord and this will include a 'sinking fund' allowance for large expenditure items.

1.2 System Synopsis

- 1.2.1 Surface water run-off from the new building and paved areas of the site will discharge to the Oldlands Farm ditch to the northeast of the site via a new headwall outfall. A balancing pond is utilised to attenuate the site run-off prior to discharge and a hydrobrake is provided upstream of the final outfall location to limit the discharge to greenfield rates (3.7 l/sec.). The majority of the site drainage is through traditional piped drainage system and proprietary units.
- 1.2.2 Foul drainage from the new buildings will be collected in a simple gravity drainage system and connected into the existing foul drainage network at manhole ref. EX FMH13, as shown on drawing 1620003993-RAM-0500-01A-DR-CR-20001. The existing private drainage network following this leads to the foul pumping station situated to the southwest of the site.

1.3 Access

- 1.3.1 The site estate's management team will coordinate and ensure maintenance requirements are met and allow suitable access for all required maintenance outlined in this document.

1.4 Sub-catchments & Exceedance Routing

- 1.4.1 The entire catchment drains via standard carrier pipe drainage network and the balancing pond. The site has been designed to contain all flow up to and including the 1 in 100 year storm + 40% for climate change. Overland flow direction is generally towards the kerb lines / drainage points within the car parks and towards the balancing pond. As such the 100 year return period plus climate change will not prohibit access and egress.



Figure 1. Flood Exceedance Flow Path/Routing

2. ROUTINE INSPECTION AND MAINTENANCE SCHEDULE

2.1 Surface Water Drainage

Item No.	Item	Description	Maintenance Issues	Details of Inspection/Maintenance Activity/Plant Requirements
1.1	Gullies	Surface water is drained from impermeable areas through grated gullies located at low points and conveyed to discharge points.	Gullies can become blocked by excessive build up in silt and debris. Grating openings can become obstructed.	Inspection and maintenance at 6 month intervals. Clearing of gullies using a gully sucker to be determined upon inspection.
1.2	Catchpit/Manhole Chambers (incl. Hydrobrake Chambers)	Manholes and catchpit chambers provide rodding and jetting access to pipework.	Manholes/catchpits can become blocked by excessive build up in silt and debris.	Manhole chambers should be inspected annually and catchpit chambers should be inspected every spring and autumn after leaf fall. Silt and debris should be removed using a gully sucker if required.
1.3	Carrier Drains	Carrier drains convey surface water across junctions.	Pipes can become blocked with silt/debris.	Inspection and maintenance at 12 month intervals. Water jetting to be undertaken when required. CCTV equipment to inspect pipe runs may be needed where necessary.
1.4	Channel/Slot Drains	Surface water is drained from impermeable areas through narrow linear openings on the surface and conveyed to discharge points along a channel section.	Slot openings and channels can become congested with silt/debris.	Periodic inspection is required to ensure slot openings and channels are clear. Should a blockage occur, rodding or jetting from an access point will be required.
1.5	Balancing Pond/Detention Basin	Shallow tracts of usually vegetated land designed to attenuate run-off through infiltration.	Can collect litter/debris. Vegetation can become overgrown	Maintenance of vegetation can be incorporated into general landscape management. Litter and debris should be removed when required.

* Also refer to CIRIA 753 SUDS Manual 2015 Table 22.1 and Table 23.1 for good practice operation and maintenance procedures

2.2 Foul Water Drainage

Item No.	Item	Description	Maintenance Issues	Details of Inspection/ Maintenance Activity/Plant Requirements
1.1	Foul Carrier Drains	Carrier drains convey foul water across junctions.	Pipes can become blocked particularly on bends	Inspection and maintenance at 12 month intervals. Water jetting or rodding to be undertaken when required.
1.2	Foul Manhole Chambers	Manholes chambers provide rodding and jetting access to pipework.	Unlikely to experience issues, provide access to maintain pipework.	Manhole chambers should be inspected annually, debris should be removed if required.
1.3	Foul sewer stacks/sewer vent pipes	Provide a connection between appliances within the building that emit foul waste and the foul drainage network.	Pipes can become blocked particularly on bends	Inspection and maintenance at 12 month intervals. Water jetting or rodding to be undertaken when required.

APPENDIX 1

FOUL AND SURFACE WATER DRAINAGE PLAN