



DRAINAGE STRATEGY

ISSUE 2

June 2026

Proposed Residential Development at Newlands Farm

Rodbourne Road

Corston

SN16 0HB

Document Control

Client	Calibre Homes		
Report title	Drainage Strategy		
Report reference	1250-01		
Report status	Draft		
Prepared by	A.Dixon BSc(Hons) CEng MICE		
Document check	Z.West		
Issue Number/status/Date	1	Draft	29-03-2026
	2	Issue 2	25-06-2026

This report is the copyright of Dixon Civils Ltd and is for the sole use of the person/organisation to whom it is addressed. It may not be used or referred to in whole or in part by anyone else without the express agreement of Dixon Civils Ltd.

Any information provided by third parties and referred to herein has not been checked or verified by Dixon Civils, unless otherwise expressly stated within this Report. This Report was checked and approved on the date shown in the Document Issue Record and is therefore valid on this date.

The licence to use and copy this Report is subject to other Terms & Conditions agreed between Dixon Civils and the Client. Dixon Civils do not accept liability for any loss or damage arising from any unauthorised use of this report.

Contents

Contents

1.0 Introduction	4
2.0 The Existing Site	4
2.1 Existing ground conditions.....	4
2.2 Intrusive Site Investigations	5
2.3 Existing Watercourses and Drainage Features	5
2.4 Existing surface water drainage arrangement.....	5
3.0 Surface Water Drainage Proposals	5
3.1 Drainage Hierarchy	5
3.2 Infiltration Design	6
3.3 Attenuation Design	6
3.4 Design Exceedance.....	7
3.5 Water Quality	7
3.6 Adoption	8
3.7 Maintenance	8
4.0 Foul Water Drainage Strategy.....	10
4.1 Existing Sewers and Drainage Arrangement.....	10
4.2 Proposal	10
4.3 Sewer Capacity	10
4.4 Adoption	10
5.0 Conclusions	11

APPENDIX	TITLE	PRODUCED BY
Appendix A – Drawings by DC	Drainage Layout	Dixon Civils
Appendix B – Drawings by others	Proposed Site Plan	Fowler Architecture and Planning
Appendix C – Sewer Records		
Appendix D – BRE365 Infiltration Tests Results		
Appendix E – Calculations		

1.0 Introduction

This drainage strategy report has been prepared on behalf of Calibre Homes for the proposed two plot residential development on land at Newlands Farm, Rodbourne Road, Corston (Application Ref: PL/2026/00442). This report will demonstrate how the appropriate means of foul and sustainable surface water drainage will be achieved for the development site.

2.0 The Existing Site

The application site covers 5335m² (0.53ha) of land occupied by agricultural barns with surrounding grassland and tarmac access road.

Access to the site is off Rodbourne Road as existing. Refer to the Proposed Site Plan prepared by Fowler Architecture and Planning dated Dec 2025 enclosed with this report.

The site is located within flood zone 1 and not at risk of surface water flooding. It is bounded to the north and east by open fields, to the west by housing and to the south by Rodbourne Road. Land use in the vicinity is predominantly residential and open fields.

2.1 Existing ground conditions

British Geological Survey (BGS) mapping indicates that the site is located over Kellaways Clay Member - Mudstone.

Defra's Multi-Agency Geographic Information for the Countryside (MAGIC) map indicates that the site is not underlain by an aquifer and is designated source protection zone 1 – Subsurface activity.

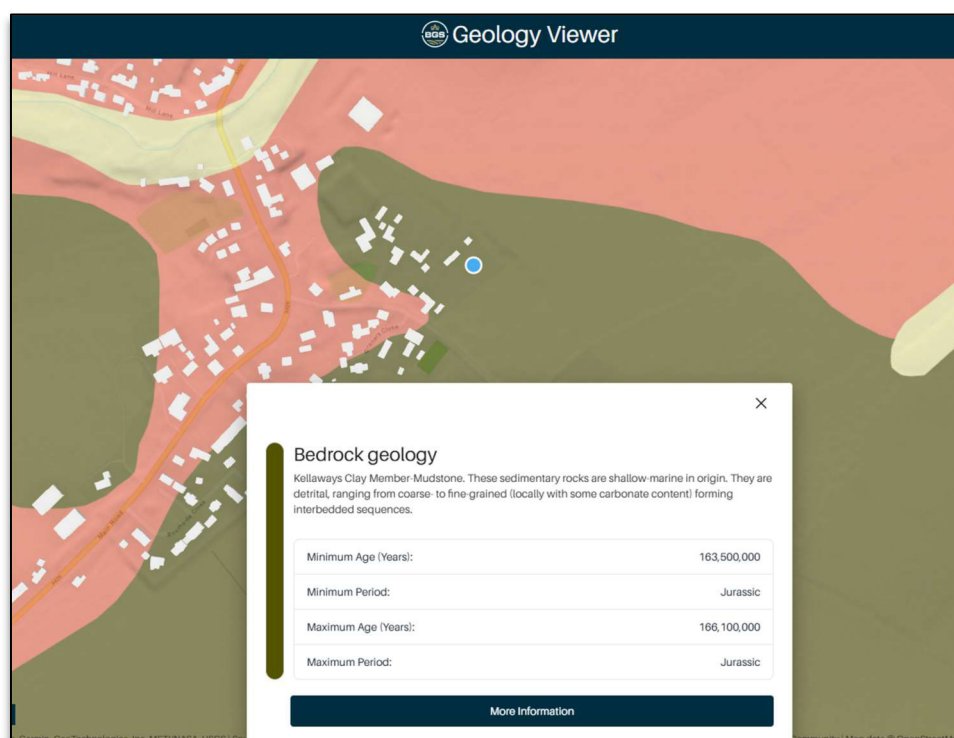


Figure 1: Bedrock Geology - Extract from British Geological Survey Geology of Britain Viewer
Source: <https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer>

2.2 Intrusive Site Investigations

As part of an earlier planning application, an intrusive site investigation was completed by Paddock Geo Engineering in January 2022, which included four trial pits excavated to depths between 0.8m and 2.5m below ground level. Infiltration testing was completed within three of the test pits, which recorded no drop in water level and were concluded as failed.

Soils were confirmed as stiff orange brown mottled blue grey clay (Kellaways Clay Member). Groundwater was not encountered within either of the trial pits.

Please refer to the test results enclosed within Appendix D of this report.

2.3 Existing Watercourses and Drainage Features

The nearest watercourse to the site is the Gauze Brook, a tributary of the River Avon, which flows in an easterly direction, passing approximately 230m to the north of the site.

Ditch lines within the adjacent fields to the north and east of the site drain to the Gauze Brook approximately 600m northeast of the site.

Asset records obtained from Wessex Water indicate the presence of a public gravity foul water sewer at the entrance of the site, within Rodbourne Road.

There are no surface water sewers within the vicinity.

Refer to Wessex Water sewer records within Appendix C of this report.

2.4 Existing surface water drainage arrangement

Surface water from the existing buildings and tarmac access road currently discharges overland to adjacent grassed areas following the natural topography.

3.0 Surface Water Drainage Proposals

Refer to DC Drawing 1250-01-01 [*Drainage Layout*] in Appendix A.

This section of the report addresses how flood risk generated as a result of developing the site will be managed using sustainable control measures to ensure that flood risks are not increased on and off the site and how surface water is managed post development.

3.1 Drainage Hierarchy

The surface water drainage strategy for the site has been prepared according to the drainage discharge hierarchy from CIRIA C753 The SuDS Manual, where the first available option will be utilised as follows.

Technique		Summary
1	Infiltration to the maximum extent that is practical	Mustone soils prevent the use of infiltration devices. Confirmed by on-site testing.
2	To surface water body	Proposed solution – Attenuated flows restricted to below greenfield rate connect to nearby ditch line.
3	To a surface water sewer, highway drain or another drainage system	Not required – No surface water sewers within the vicinity of the site.
4	To a combined sewer	Not required.

3.2 Infiltration Design

Poor infiltration properties of the Kellaway Clay mudstone soils below the site, evidenced by failed BRE365 testing, precludes the use of soakaways and infiltration devices as the main source of surface water discharge. Permeable surfaces and sub-bases will however be utilised where possible to maximise any available pockets of infiltration, before discharging to attenuation features.

3.3 Attenuation Design

Wiltshire Council's surface water runoff policy for greenfield developments requires a 30% betterment over existing greenfield discharge rates. Based on the existing run-off rates, summarised by the Infodrainage Greenfield runoff rate estimation tool, this equates to a current peak discharge rate from the site for the 100 year storm event at 6.5l/s.

Region	QBAR Rural (L/s)	QBAR Urban (L/s)	Q 1 (years) (L/s)	Q 30 (years) (L/s)	Q 100 (years) (L/s)
Region 8	2.7	2.7	2.1	5.1	6.5

Calculations indicate SuDS attenuation of 61.37m³ will be required to accommodate runoff from the proposed impermeable areas, including the existing access road, for storm events up to and including the 100year + 45% climate change event with a peak outflow rates a minimum of 30% less than pre-development rates, as tabled below.

Storm Return Period	Existing Flow Rate (l/s)	30% reduction target (l/s)	Designed outflow rate (l/s)	Betterment Provided (%)
1 year	2.1	1.47	1.4	33.3
30 year	5.1	3.57	2.5	51
100 year	6.5	4.55	3.0	53.8
100 year +45% climate change increase	6.5+	4.55	3.8	41.5

Roof water will discharge into the permeable driveway sub-base's and benefit from an additional 26.5 m³ attenuation provided by the sub-base stone.

Although the soil infiltration rate is too slow to support an infiltration only based design, the permeable driveways are proposed to be wrapped in permeable geotextiles to maximise any available soakage. Refer to the proposed drainage calculations enclosed within appendix E of this report.

3.4 Design Exceedance

Should the drainage system and SuDS fail under extreme events or blockages, floodwaters will follow the natural topography to the east along the access road toward the adjacent fields and ditch network, mirroring the existing pre-development arrangement.

3.5 Water Quality

Roof water is considered fairly uncontaminated, however runoff from the driveway parking areas can be susceptible to hydrocarbon contamination, which in this instance will be intercepted within permeable stone and textiles that make up the permeable paving sub-base construction, before discharging to the watercourse.

Water quality has been assessed in line with the Simple Index approach from Chapter 26 of CIRIA C753 The SuDS Manual:

1. Step 1 – Allocate suitable pollution hazard indices for the proposed land use.
2. Step 2 – Select SuDS with a total pollution mitigation index that equals or exceeds the pollution hazard index.

Pollution Hazard Indices

Below figures are obtained from Table 26.2 CIRIA C753 The SuDS Manual '*Pollution hazard indices for different land use classifications*'

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Individual property driveways, residential car parks and low traffic roads	Low	0.5	0.4	0.4

Pollution Mitigation Indices

Below figures are taken from Table 26.3 & 26.4 CIRIA C753 The SuDS Manual '*Indicative SuDS mitigation indices for discharge to surface waters and groundwater*'

SuDS Feature	Total suspended solids (TSS)	Metals	Hydrocarbons
Constructed permeable pavement	0.7	0.6	0.7

The pollution mitigation indices for the proposed drainage system therefore exceed the pollution hazard indices and provide suitable pollutant removal

3.6 Adoption

The onsite drainage components will remain private and be the maintenance responsibility of the property owners.

3.7 Maintenance

Regular inspection and maintenance are important for the effective operation of the SuDS systems as designed. The regular maintenance of SuDS should be carried out in line with C753 The SUDS Manual (CIRIA, November 2015) or as per manufacturer's specification.

Pipework and Catchpits

It is not envisaged that silt build up within the pipework systems will require rigorous maintenance. Notwithstanding this, a suitable maintenance regime for the systems will comprise of routine inspection (every six months) and silt removal as necessary.

Cellular Attenuation Tank

It is not envisaged that silt build up within the cellular crate systems will require a rigorous maintenance regime so long as silt is removed from upstream catch pits and inspection chambers on a regular basis. Camera access can be gained via inspection chambers and inlet pipework to the soakaway. Silt removal can be achieved by jetting the inspection tunnels, where a standard jet head with rear facing nozzles should be used. The head should be fed to the far end of the crate tunnel via the nearest inspection

chamber, activated and retracted. As the nozzle is removed, debris will be swept back into the inspection chamber where it can then be removed with the use of a standard gully sucker.

Permeable Surfacing

Permeable surfaces need to be regularly cleaned of silt and other sediments to preserve the infiltration capability of the surface. Suggested brushing regime would be at the end of winter to collect winter debris, mid-summer to collect dust, vegetation and grass-type deposits and after autumn leaf fall.

Drainage Element	Schedule	Maintenance Requirement	Frequency
Permeable Surfacing	Occasional	Removal of weeds	As required
	Remedial	Remedial work to any depressions or cracked or broken blocks considered a hazard to end users or detrimental to performance.	As required
		Rehabilitation of surface and upper sub-structure by remedial sweeping	Every 10 – 15 years, or as required
	Monitoring	Initial inspection Inspect for evidence of weed growth or poor operation Inspect silt accumulation rates Monitor inspection chambers	Monthly for 3 months after installation Three monthly, 48 hours after large storms in first six months Annually Annually
Pipework and Catchpits	Regular	Inspect for accumulation of silt	Every six months
		Inspect for debris and litter	
	Occasional	Inspect inlets and outlets for blockages Remove debris and litter Remove silt	As required
Cellular Attenuation Storage	Regular	Inspect and identify any areas that are not operating correctly	Monthly for 3 months, then annually
		Remove debris from the catchment surface	Monthly
		Remove sediment from pre-treatment structures and internal forebays	Annually, or as required
	Remedial	Repair and rehabilitate inlets, outlets, overflows and vents	As required
	Monitoring	Inspect inlets, outlets, overflows and vents to ensure they are operating as designed Survey inside of tank for sediment build-up and remove as necessary	Annually Every 5 years, or as required

4.0 Foul Water Drainage Strategy

Refer to DC Drawing 1250-01-01 [*Drainage Layout*] in Appendix A.

4.1 Existing Sewers and Drainage Arrangement

The existing application site does not currently generate foul water flows.

Asset records obtained from Wessex Water indicate the presence of public gravity foul and surface water sewers in Rodbourne Road.

Refer to Wessex Water sewer records within Appendix C of this report.

4.2 Proposal

It is proposed to connect the new foul water flows from the site into Wessex Water public sewer network within Rodbourne Road.

4.3 Sewer Capacity

A capacity check has been submitted to Wessex Water and a response is awaited.

4.4 Adoption

The foul water drainage components will remain private and be the maintenance responsibility of the property owners.

5.0 Conclusions

The proposed new dwellings at Newlands Farm will increase the impermeable surface area when compared to existing. On site storage will be provided within a cellular storage tank and permeable driveway Sustainable Urban Drainage Systems (SUDS). The SUDS features have been designed to accommodate the 1 in 100 year storm, including a 45% allowance for climate change and discharge at a minimum of 30% lower than the existing greenfield equivalent rate to the adjacent ditch network.

Foul flow from the proposed dwelling will drain into the existing foul water sewer within Rodbourne Road at the entrance to the site.

The proposed SUDS and all other foul and surface water drainage components will remain private and be maintained by the owners of the properties.

We can conclude that providing the development adheres to the conditions advised in this report, the proposals can be accommodated without increasing flood risk to the site and local area.

Dixon Civils Ltd

Issue 2 - June 2026

APPENDIX A

Drawings by Dixon Civils

Drawing ref. 1250-01-01

Drainage Layout



KEY:

- Existing Foul Water Sewer
- Private Foul Water Drain, Inspection Chamber & Invert Level
- Private Surface Water Drain, Inspection Chamber & Invert Level
- Rodding Eye
- Surface Water Catchpit Chamber
- Channel Drain
- Permeable Sub-base Distribution Tank
- Permeable Gravel Surfacing
- Cellular Attenuation Tank
- Flood Flow Route (Over 1:100yr+45% storm event)
- Proposed Surface Water Headwall
- Full Depth Restraint

NOTES

- At the commencement of works on site the contractor is to carry out trial pits and liaise with Utility Companies in order to establish the exact position of all existing statutory utility plant in the vicinity of works and take adequate precautions for their protection.
- All existing manhole covers/valves/inspection covers to be adjusted where necessary to suit design levels.
- Prior to construction of any drainage works, the Contractor is to confirm the invert levels of existing manholes and sewers. Any variations from the designed levels shown on the drawings shall be reported to the Engineer in advance of construction works commencing.
- All drainage to be laid soffit to soffit, unless shown otherwise.
- All specified products to be installed in accordance with the Construction Details Drawing (Drg No. 1250-02-01)
- Do not scale from this drawing. Work only from stated dimensions or setting out details.
- All levels are in metres above Ordnance Datum.
- All drainage that is not subject to adoption as public sewers must be constructed in accordance with the latest Building Regulations, BS8301, and, where appropriate, the relevant agreement certificates.
- Private drainage pipework to be 100mm ϕ unless shown otherwise on Engineering Layout Plans.
- 100mm ϕ foul water shall be laid no flatter than 1 in 80 & 100mm ϕ storm water drainage shall be laid no flatter than 1 in 100. 150mm ϕ pipework shall be laid no flatter than 1 in 150.

A	Attenuation tank and flow control chamber amended	AD	25.06.26
-	FIRST ISSUE	AD	27.03.26
Rev	Description	Dm	Date

REVISIONS

Dixon Civils
Drainage & Infrastructure Design
www.DixonCivils.com 01249 490813 Enquiries@DixonCivils.com

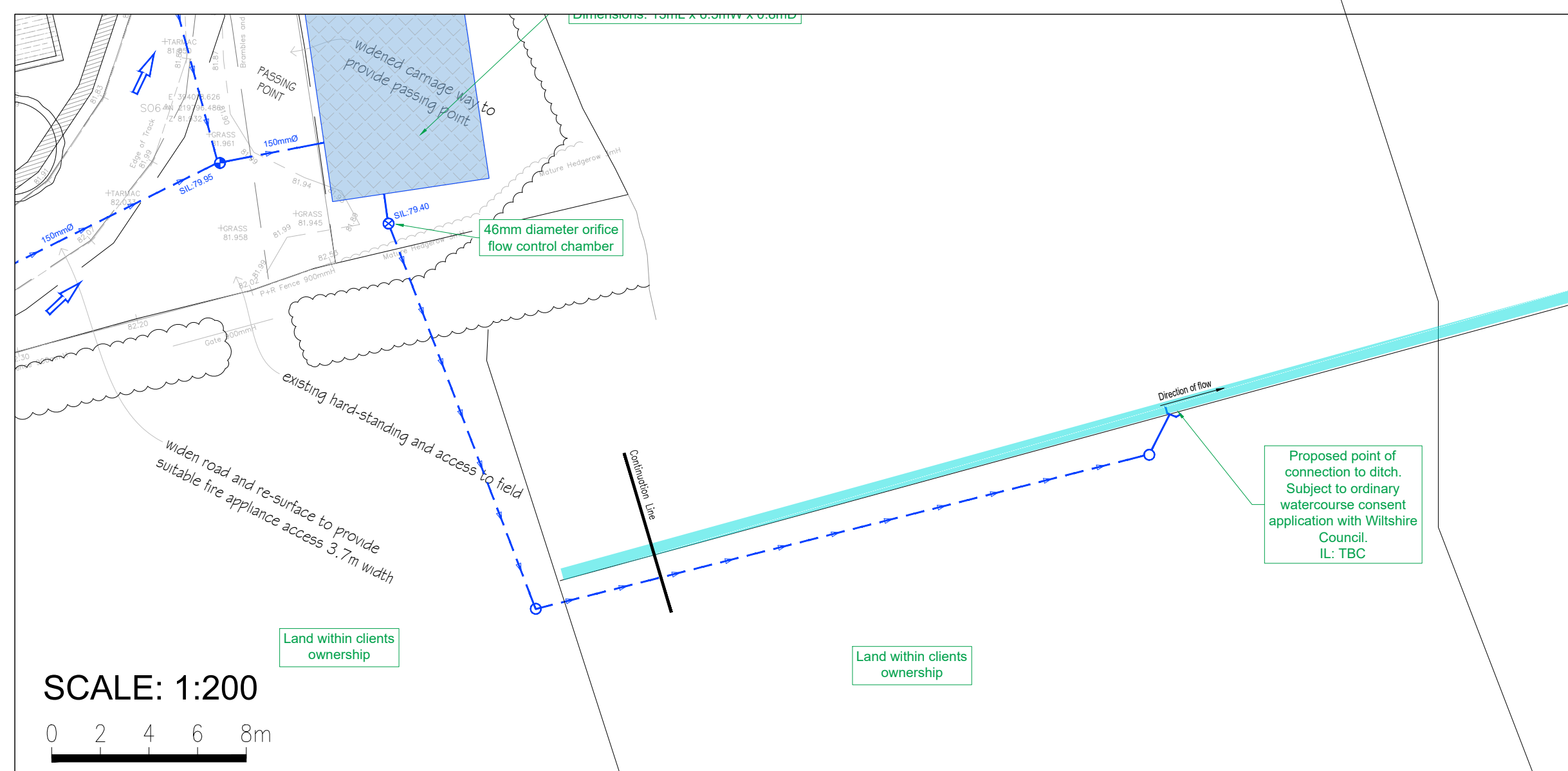
Calibre Homes
Proposed Residential Development
Newlands Farm
Corston

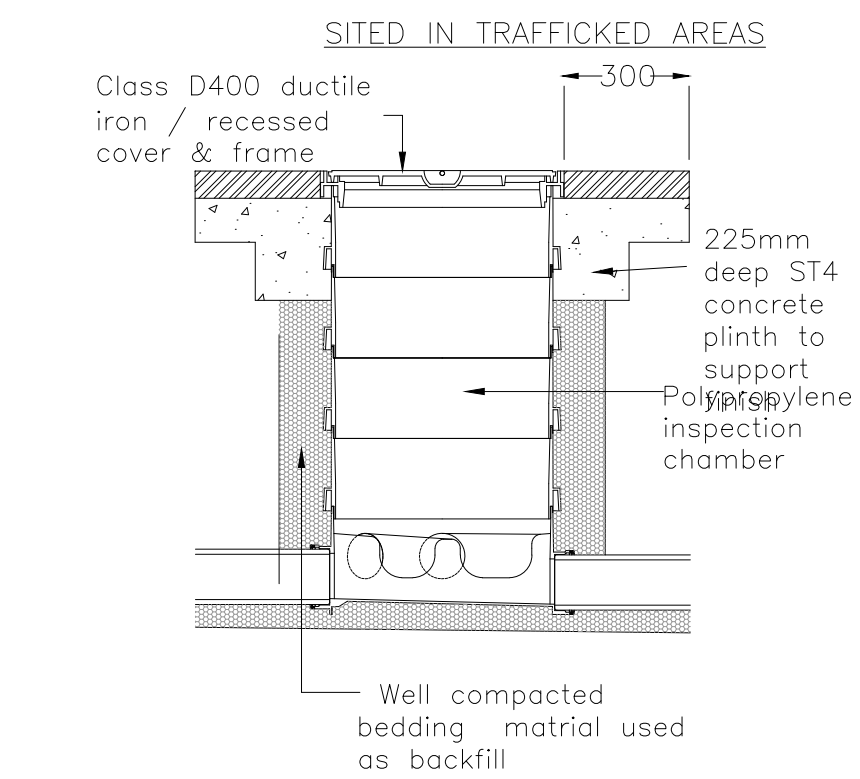
Drainage Layout

DATE: MARCH 2026 DRAWN: AD
DRAWING No: 1250-01-01 REV: A SCALE: 1:200 @ A1

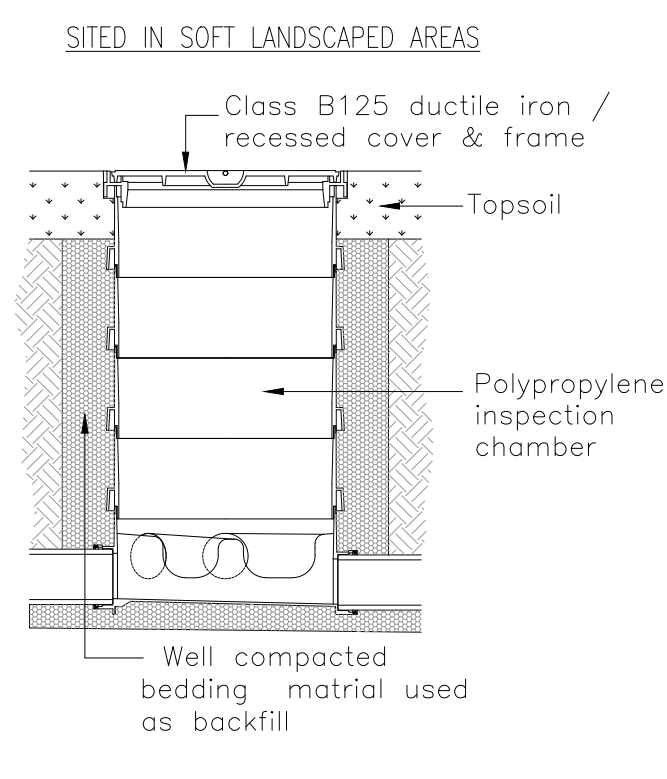
FOR APPROVAL

This drawing is the copyright of Dixon Civils Limited.
It may not be reproduced or amended without the written approval of Dixon Civils Limited.

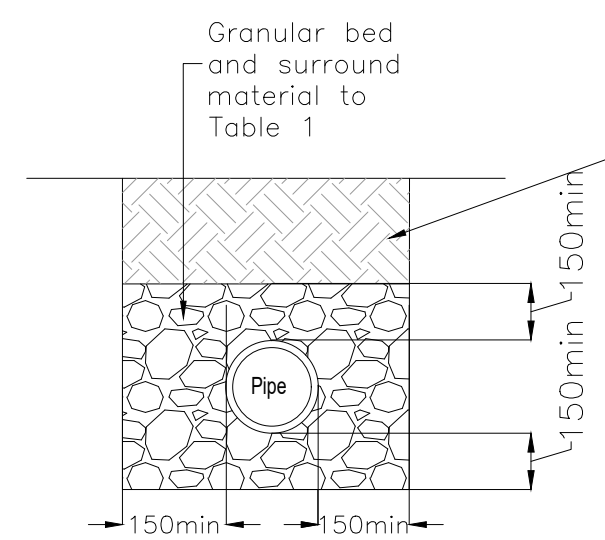




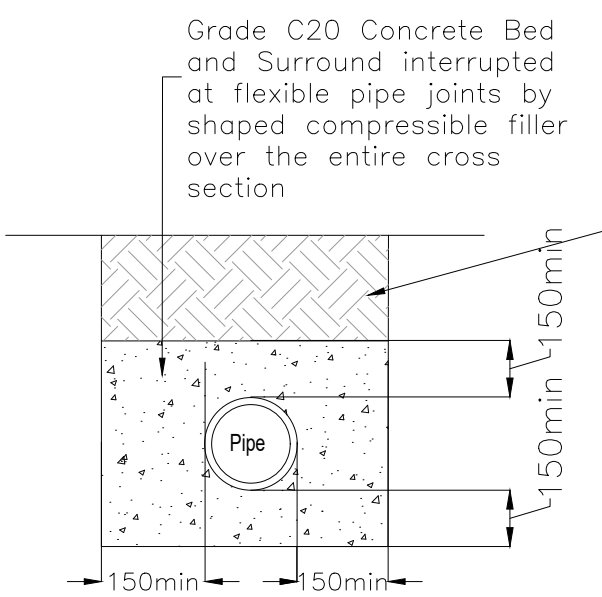
POLYPROPYLENE INSPECTION CHAMBER & COVER



GRANULAR PIPE BEDDING AND SURROUND FOR UNLOADED APPLICATIONS AND TRAFFICKED AREAS WITH OVER 1.2M COVER

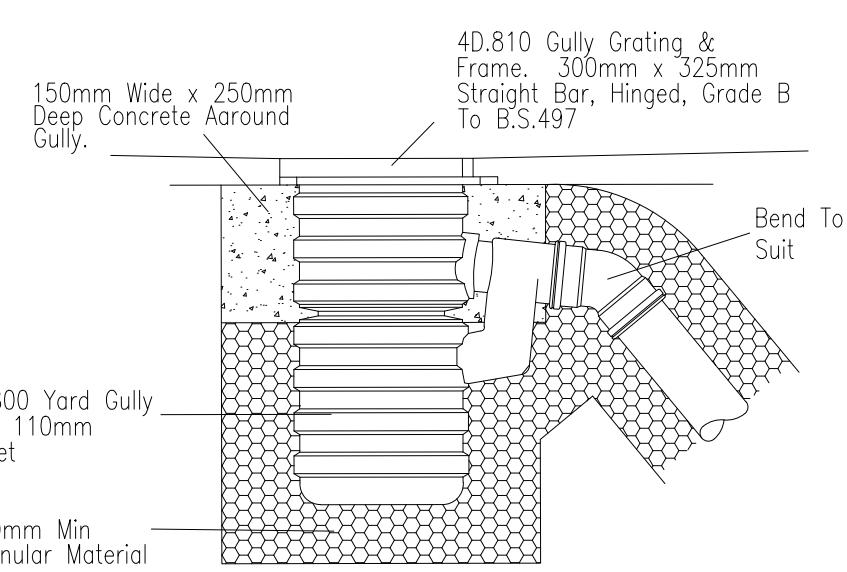


Type-1 Trench backfill material compacted in layers not greater than 250mm thick. Heavy compaction equipment not to be used until pipe has minimum cover of 250mm.

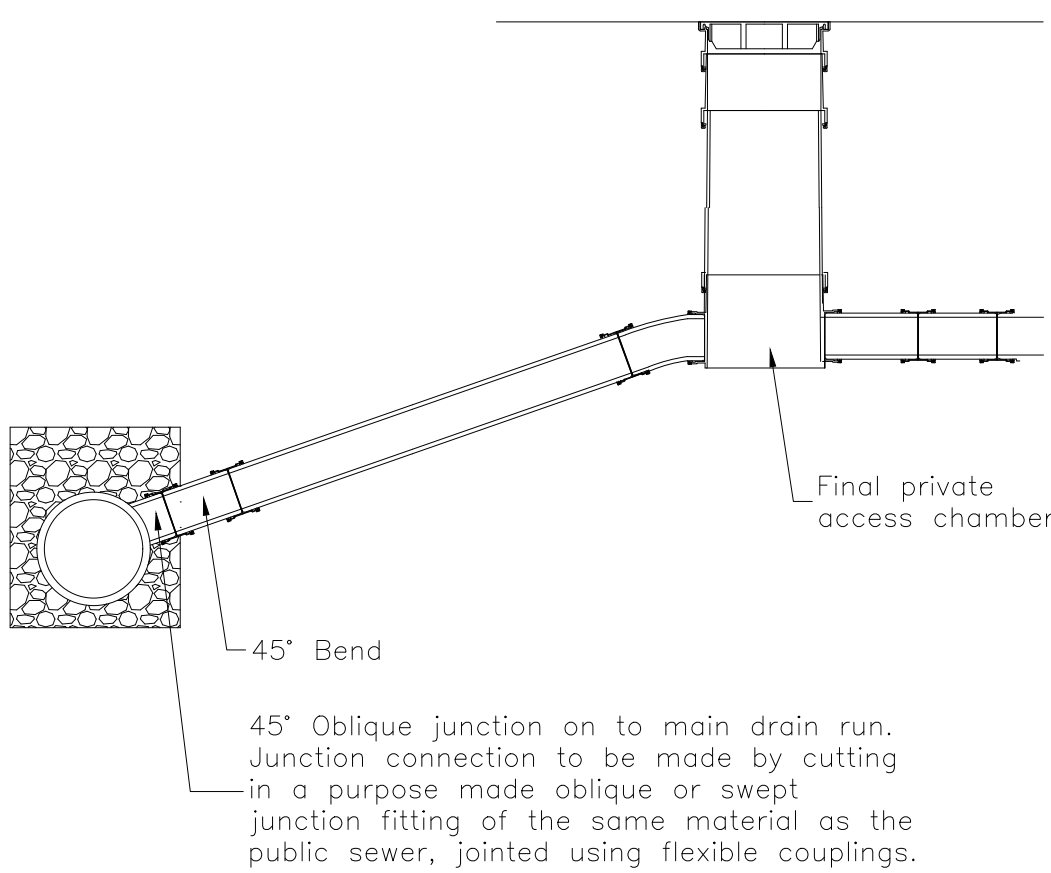


CONCRETE BEDDING AND SURROUND FOR TRAFFICKED AREAS <1.2M DEEP

Trench backfill material compacted in layers not greater than 250mm thick. Heavy compaction equipment not to be used until pipe has minimum cover of 250mm. Backfill under trafficked areas to be Type 1 Stone

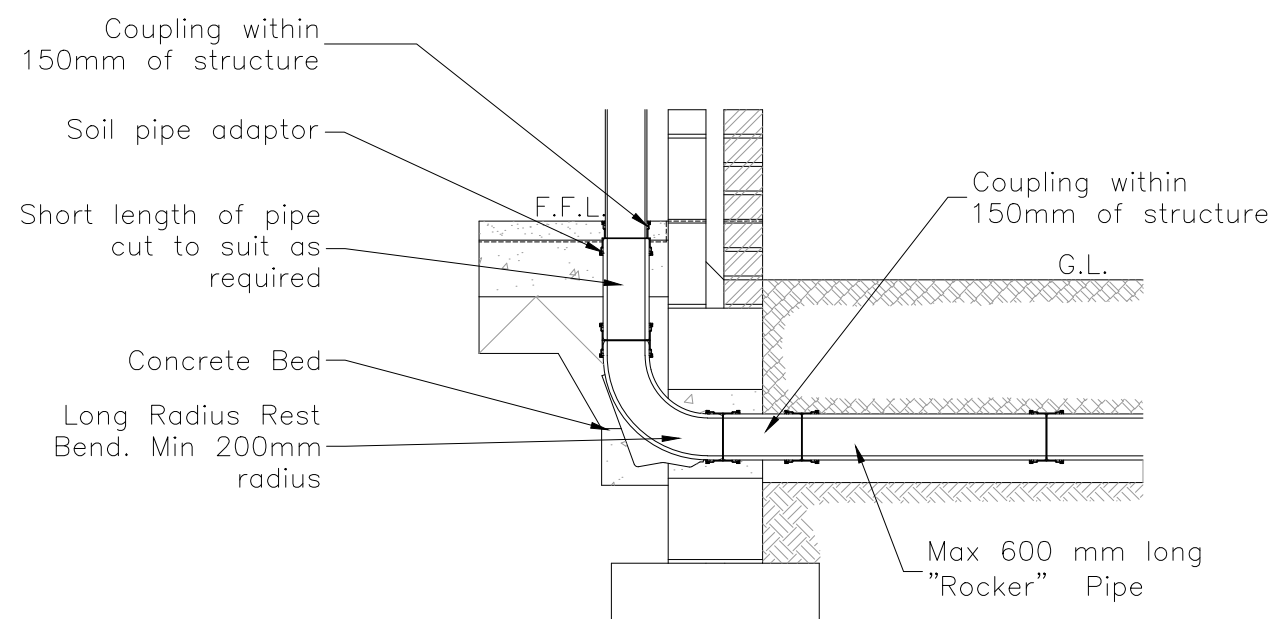


ROAD GULLY

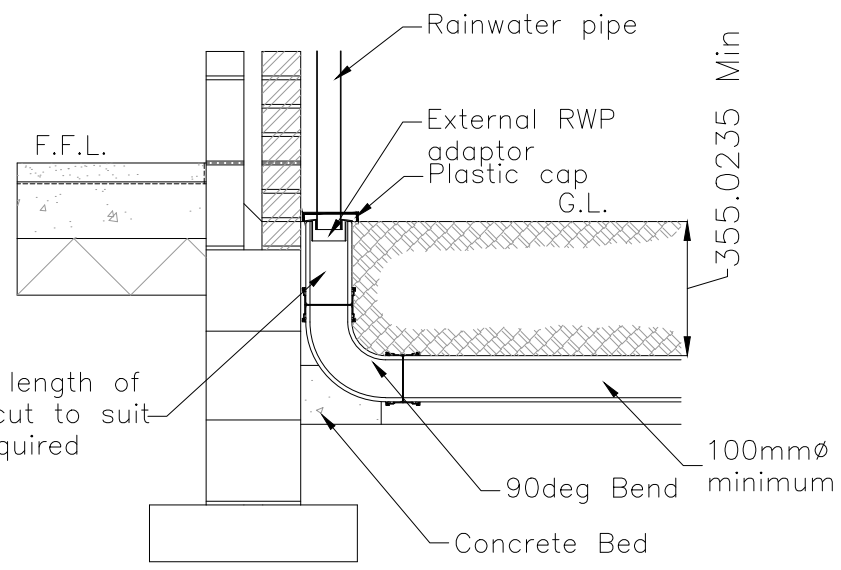


CONNECTION TO EXISTING SEWER

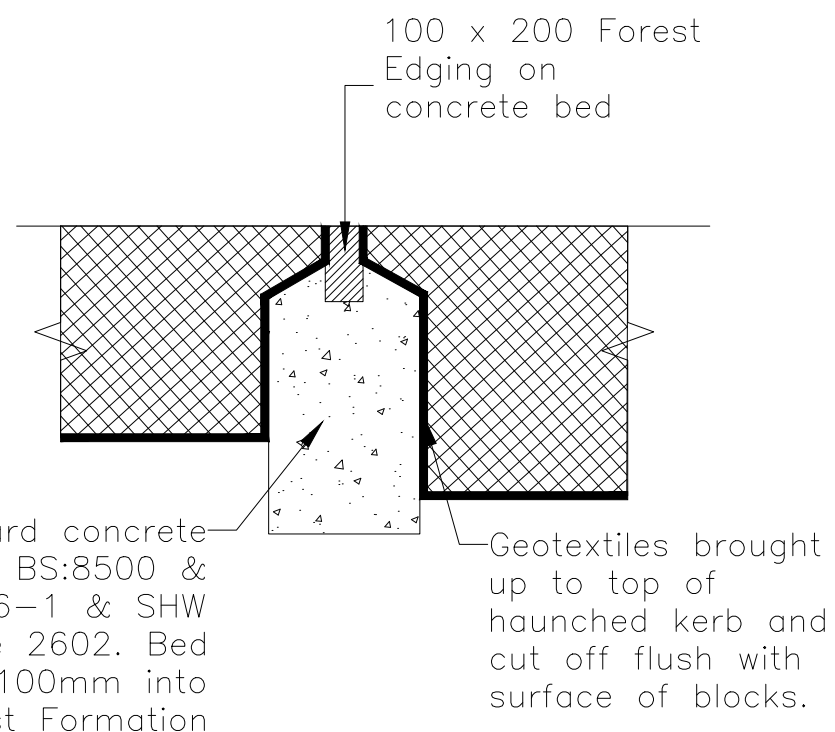
Connection to be signed off by Wessex Water prior to backfilling



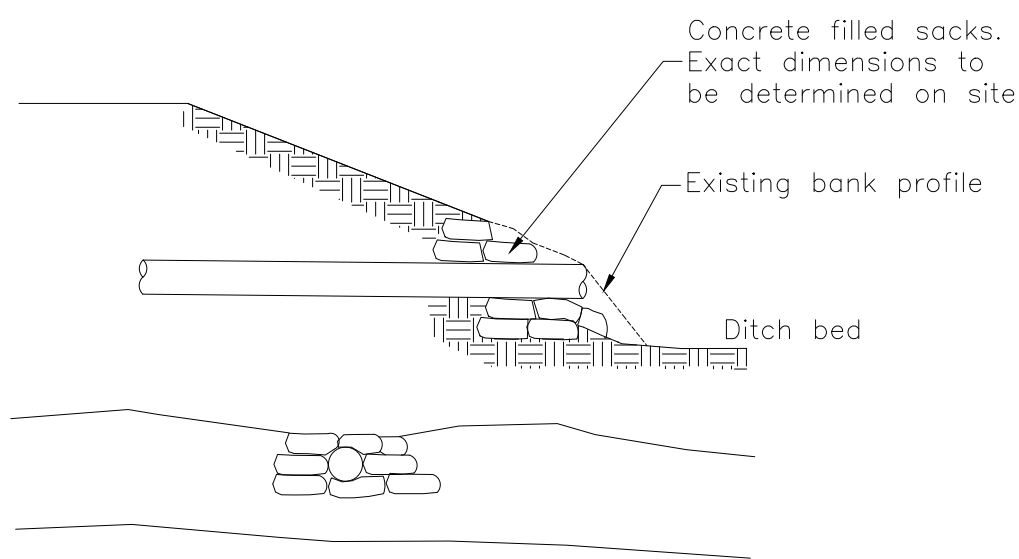
SVP / STUB STACK CONNECTION



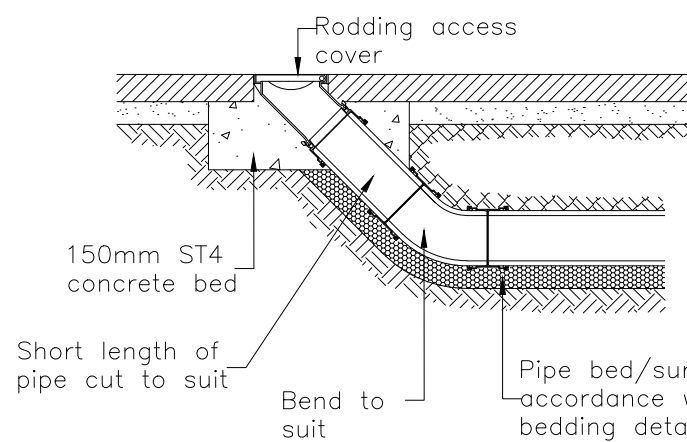
RWP DOWNPIPE CONNECTION



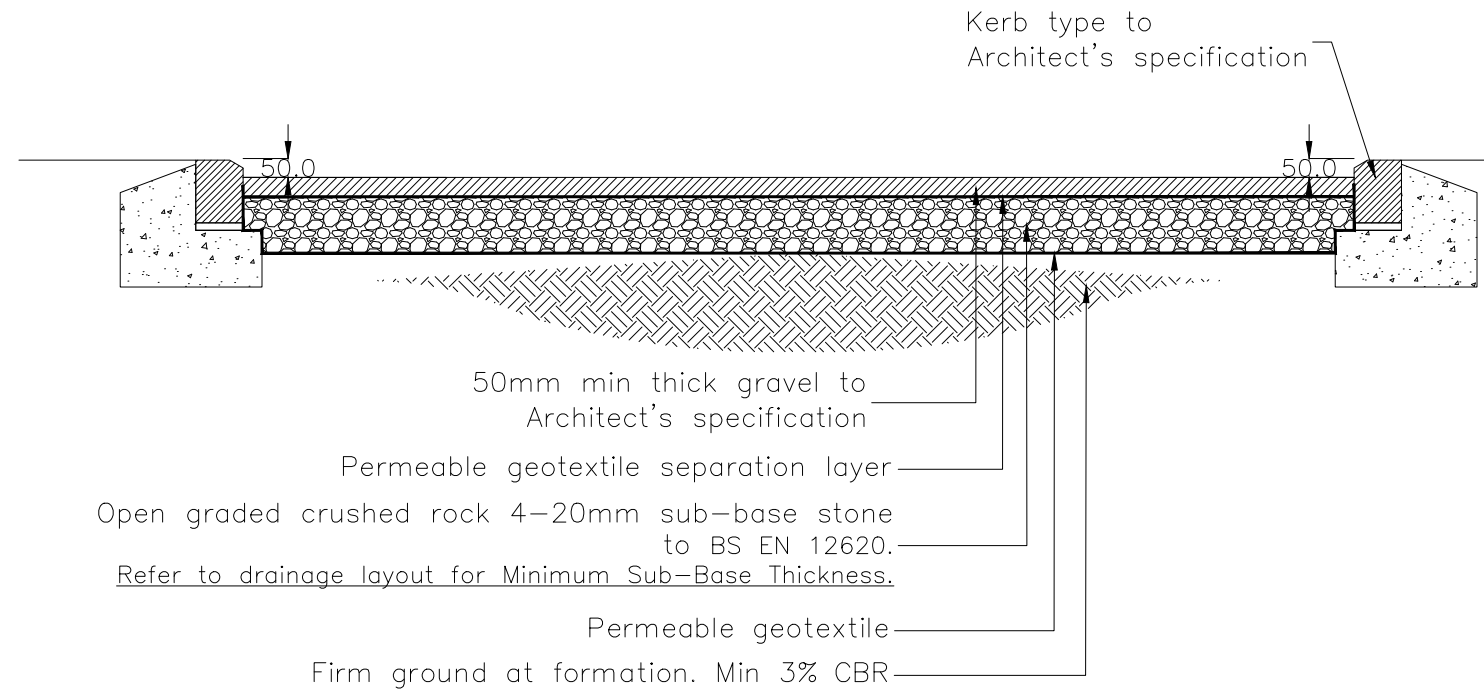
FULL DEPTH RESTRAINT



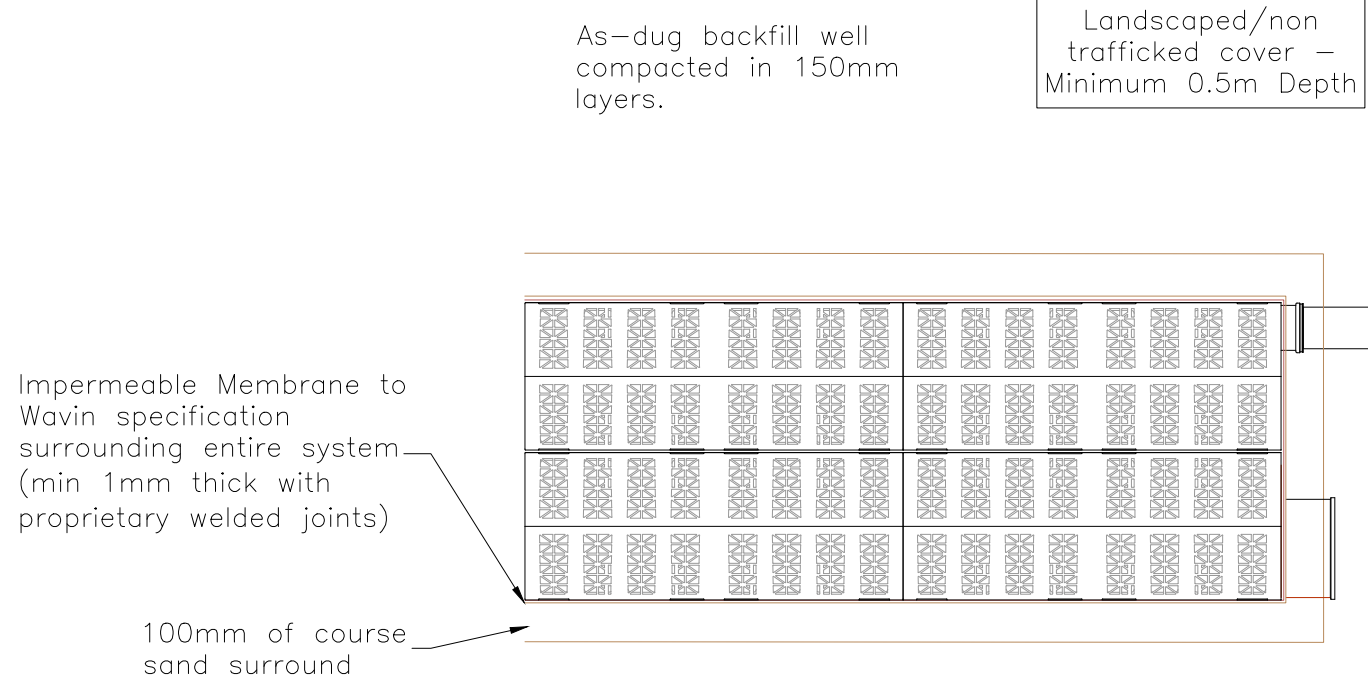
CONCRETE BAG HEADWALL



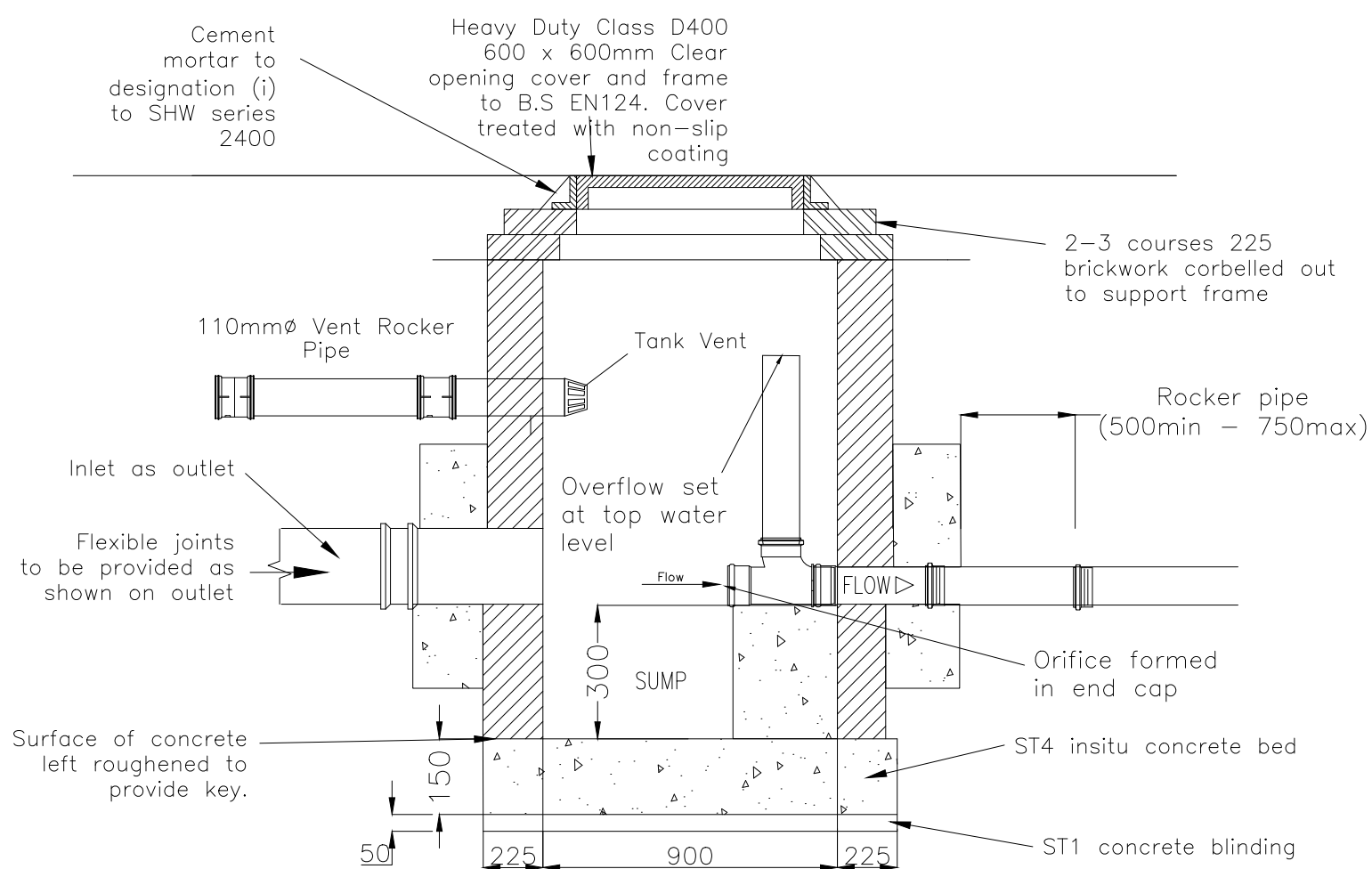
RODDING POINT



UNBOUND GRAVEL DRIVE



STORAGE TANK OUTLET WITH HYDROBRAKE MANHOLE



BRICKWORK CATCHPIT AND ORIFICE PLATE CONTROL

Pipe nominal size (DN)	Nominal maximum particle size (mm) See note (c)	Class of bedding See note (d)	Suitable Materials	
			EITHER: Maximum CF value for acceptability See note (b)	OR: Materials specified in British Standards See note (a)
100	10	S	0.15	10mm nominal single-size
		B	0.30	
		N	0.30	Fine aggregate
Over 100 to 150	16	S	0.15	10mm or 14mm nominal single-size or 14mm to 5mm graded
		B	0.30	
		N	0.30	Fine aggregate
Over 150 to 300	20	S	0.15	10, 14 or 20mm nominal single-size or 14mm to 5mm graded or 20 to 5mm graded
		B	0.30	
		N	0.30	All-in aggregate or fine aggregate
Over 300 to 550	20	S	0.15	14mm or 20mm nominal single-size or 14mm to 5mm graded or 20 to 5mm graded
		B	0.30	
		N	0.30	All-in aggregate or fine aggregate
Over 550	40	S	0.15	14, 20 or 40mm nominal single-size crushed rock or 14mm to 5mm, 20 to 5mm or 40 to 5mm graded
		B	0.30	
		N	0.30	All-in aggregate or fine aggregate

- Notes:
- (a) Processed granular materials to include aggregates to BS EN 12620.
- (b) Compaction Fraction value (CF), see Appendix B of Ws IGN No. 4-08-02.
- (c) The nominal maximum particle sizes apply both to processed and as-dug materials (see Section 4 of IGN No. 4-08-02- Issue 4 and No 4-08-02 Amendment (Nov 2000)).
- (d) Bedding classes are defined in: BS EN 1295-1:1997 Structural Design of Buried Pipelines under various conditions of loading. TRRL - Simplified Table of External Loads on Buried Pipelines.
- (e) The sulphate content of bedding and sidefill materials for use with cementitious pipe should not be greater than 0.3% as sulphur trioxide.

TABLE 1 - PROCESSED AND AS-DUG GRANULAR BEDDING AND SIDEFILL MATERIALS FOR RIGID PIPES

A	Flow control chamber detail revised	AD	25.06.26
-	FIRST ISSUE	AD	27.03.26
Rev	Description	Dm	Date

REVISIONS



CLIENT

Calibre Homes

JOB TITLE

Proposed Residential Development
Newlands Farm
Corston

DRAWING TITLE

Construction Details

DATE MARCH 2026 DRAWN AD

DRAWING NO. 1250-02-01 REV A SCALE NTS @ A1

ISSUED FOR

PRELIMINARY ISSUE

This drawing is the copyright of Dixon Civils Limited.
It may not be reproduced or amended without the written approval of Dixon Civils Limited.

Do not scale from this drawing.
Work from stated dimensions only.

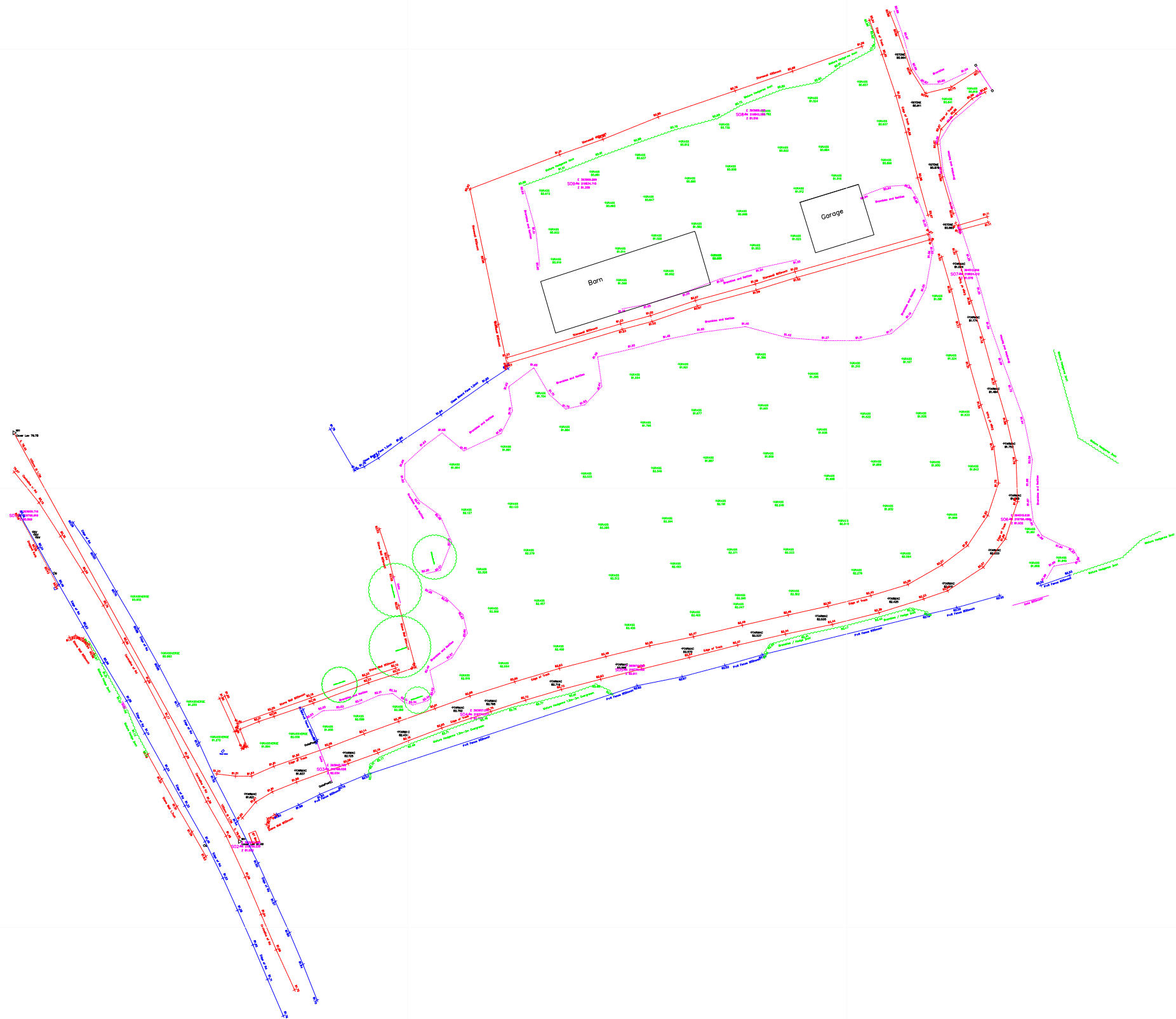
APPENDIX B

Drawings by others

Drawing ref. 250713-02A

Proposed Site Plan (Fowler Architecture and
Planning)

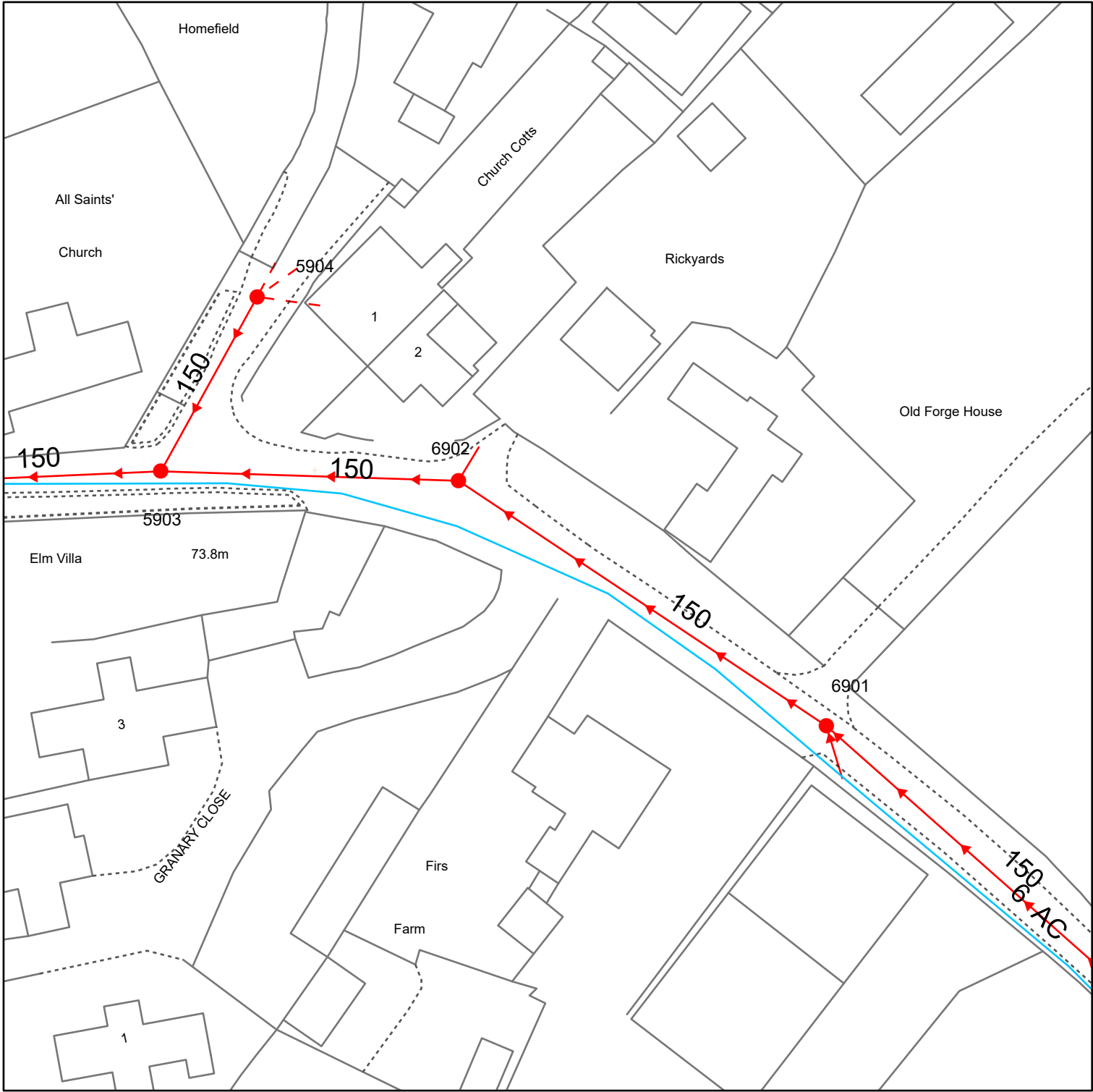
Existing Topographical Survey



APPENDIX C

Wessex Water Sewer Records

Wessex Water Network Map



Reproduced from the Ordnance Survey map with the permission of the Controller of His Majesty's Stationery Office. © Crown copyright and database rights (2026) OS AC0000848304

WATER MAINS	SEWERS	STRATEGIC PUBLIC	PRIVATE	SECTION 104	OTHER WESSEX PIPES	NON-WESSEX / UNKNOWN
- Distribution - Washout - Raw Water - Abandoned - Private	- Foul - Surface - Combined - Abandoned	Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow).	Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow).	Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow).	- Rising Mains - Standby Rising Mains - EDM - Effluent Disposal - Overflow - Syphon	- Private Rising Mains - Culverted Watercourse - Highway Drain - Use Unknown - Status Unknown
FITTINGS - Hydrant - Other	STRUCTURES - Manhole - Foul - Manhole - Surface - Manhole - Combined - Inlet - Outfall - Lamphole - Bifurcation - Foul - Bifurcation - Surface - Bifurcation - Combined - Combined Sewage Overflow	- Pumping Station - Surface - Pumping Stn - Foul/Combined - Gully - Vent Column - Rodding Eye - Catchpit - Flushing Chamber - Soakaway - Non Return Valve - Air Valve - Hatch Box - Washout	- Pumping Station - Surface - Pumping Stn - Foul/Combined - Gully - Vent Column - Rodding Eye - Catchpit - Flushing Chamber - Soakaway - Non Return Valve - Air Valve - Hatch Box - Washout	- Pumping Station - Surface - Pumping Stn - Foul/Combined - Gully - Vent Column - Rodding Eye - Catchpit - Flushing Chamber - Soakaway - Non Return Valve - Air Valve - Hatch Box - Washout	- OTHER STRUCTURES - Attenuation Tank - Storage Tank - Chamber - Tunnel - Interceptor	Wessex Water YTL GROUP

Information in this map is provided for identification purposes only. No warranty as to accuracy is given or implied. The precise route of pipe work may not exactly match that shown. Wessex Water does not accept liability for inaccuracies. Sewers and lateral drains adopted by Wessex Water under the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 are to be plotted over time and may not yet be shown. In carrying out any works, you accept liability for the cost of any repairs to Wessex Water apparatus damaged as a result of your works. You are advised to commence excavations using hand tools only. Mechanical digging equipment should not be used until pipe work has been precisely located. If you are considering any form of building works and pipe work is shown within the boundary of your property or a property to be purchased (or very close by) a surveyor should plot its exact position prior to commencing works or purchase. If you are proposing to build over or near Wessex Water's apparatus you should contact the Developer Services Team, tel: 01225 526333 or e-mail: developer.enquiries@wessexwater.co.uk to discuss your proposals. Details of assets within Wessex Water's land ownership are unavailable through this service.

Date: 07/03/2026
Centre: 392616E, 183931N
Scale: 1:625
(when printed at A4 size)

APPENDIX D

BRE365 Infiltration Test Results

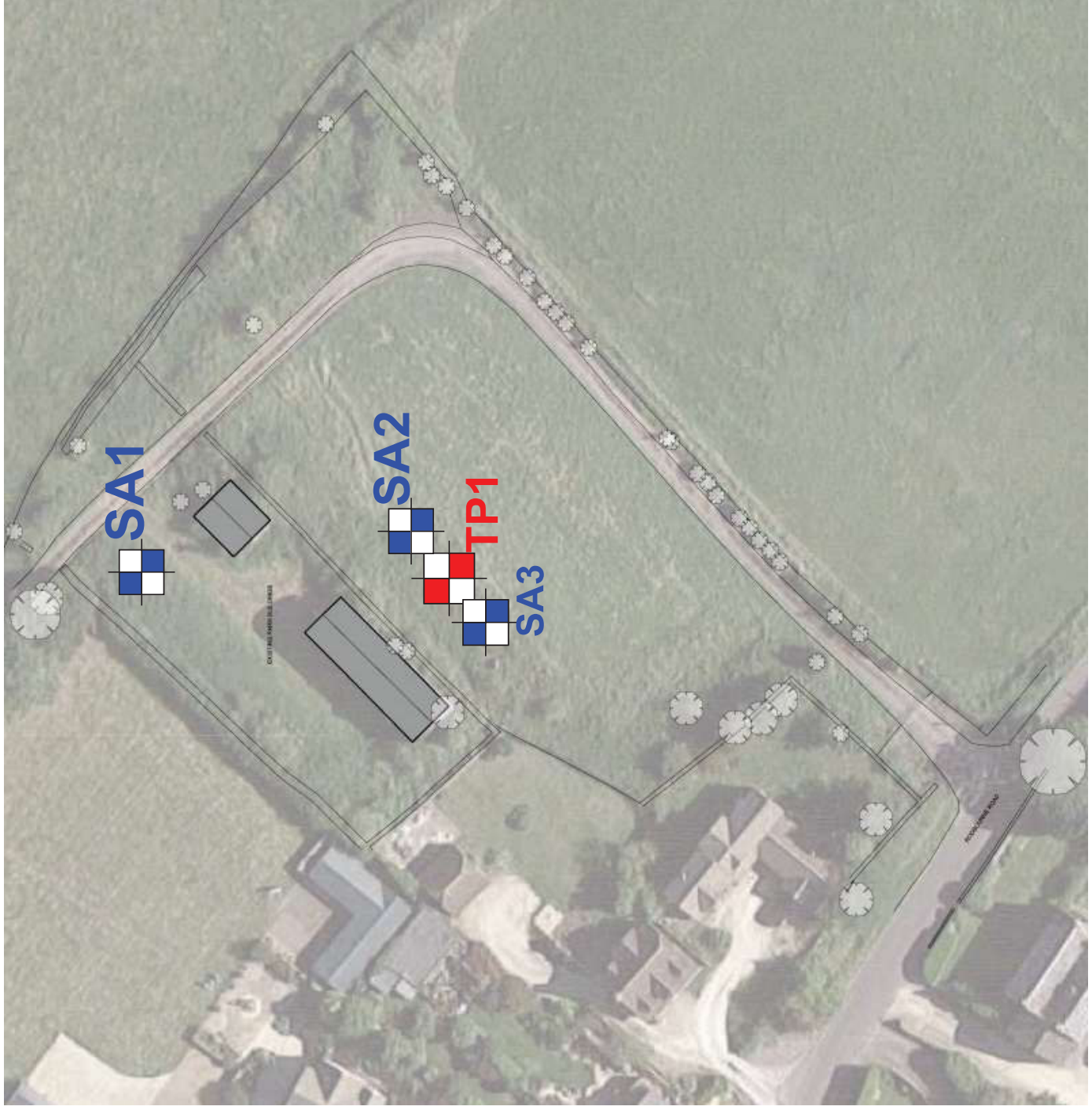
Trial Pit With
Infiltration Testing
(to BRE 365)
Locations



Trial Pit Locations
(Without Testing)



Not to scale.
All positions are approximate.
Based on plan provided
by the client.



APPENDIX C

Trial Pit Log

PADDOCK GEO ENGINEERING						Site Land off Rodbourne Road, Corston, Wiltshire, SN16 0HA		Trial Pit Number SA1			
Machine : 5 Tonne Excavator Method : Trial Pit		Dimensions 1.40m by 0.35m		Ground Level (mOD)		Client Steve Newman		Job Number P21-374			
		Location		Dates 27/01/2022		Engineer PGE		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water			
					(0.20) 0.20	Grass over: Dark grey clayey gravelly fine to coarse SAND with frequent roots and rootlets up to 10mm in diameter. Gravel is angular fine to coarse limestone and brick. (TOPSOIL / MADE GROUND)					
					(0.50)	Brown to dark yellow brown slightly clayey sandy gravelly COBBLES. Cobbles are angular to sub rounded fine to coarse limestone and brick. Gravel is angular to sub rounded fine to coarse brick, limestone, and ceramic. (MADE GROUND)					
					0.70	Stiff orange brown CLAY. (KELLAWAYS CLAY MEMBER)					
					(1.20)						
						...1.50m: becoming locally mottled dark orange brown with slightly sandy CLAY bands.					
						...1.70m: becoming slightly gravelly CLAY with a low cobble content. Gravel is angular limestone, and ironstone. Cobbles are angular limestone.					
					1.90	Yellow brown to brown yellow slightly sandy very gravelly COBBLES of angular to subangular limestone. Gravel is angular to sub angular fine to coarse limestone. (CORNBRAH FORMATION)					
					(0.50)						
					2.40 (0.10) 2.50	Brown yellow slightly cobbly very sandy angular to sub angular fine to coarse GRAVEL of limestone. (CORNBRAH FORMATION)					
						Complete at 2.50m					
						Remarks Trial Pit remained open and stable. No groundwater encountered. No samples were recovered.					
						Scale (approx) 1:20		Logged By TN		Figure No. P21-374.SA1	

PADDOCK GEO ENGINEERING						Site Land off Rodbourne Road, Corston, Wiltshire, SN16 0HA		Trial Pit Number SA2	
Machine : 5 Tonne Excavator Method : Trial Pit		Dimensions 1.30m by 0.35m		Ground Level (mOD)		Client Steve Newman		Job Number P21-374	
		Location		Dates 27/01/2022		Engineer PGE		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
					(0.50) 0.50 (1.70) 2.20	Grass over: Soft dark grey slightly sandy CLAY with occasional roots and rootlets up to 2mm in diameter. (TOPSOIL) Stiff orange brown mottled blue grey CLAY. (KELLAWAYS CLAY MEMBER) ...2.00m: with bands of slightly sandy CLAY. Complete at 2.20m	</		

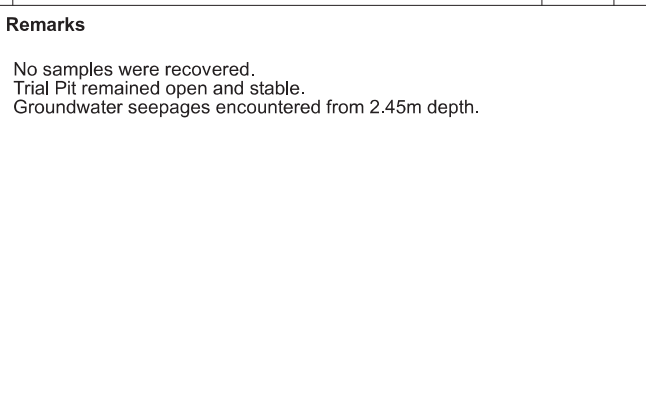


Remarks Trial Pit remained open and stable. No groundwater encountered. No samples were recovered.		
Scale (approx) 1:20	Logged By TN	Figure No. P21-374.SA2

						Site Land off Rodbourne Road, Corston, Wiltshire, SN16 0HA		Trial Pit Number SA3	
Machine : 5 Tonne Excavator Method : Trial Pit		Dimensions 1.10m by 0.35m		Ground Level (mOD)		Client Steve Newman		Job Number P21-374	
		Location		Dates 27/01/2022		Engineer PGE		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
					0.50 0.50 (0.30) 0.80	Grass over: Soft dark grey slightly sandy CLAY with occasional roots and rootlets up to 2mm in diameter. (TOPSOIL) Stiff orange brown mottled blue grey CLAY. (KELLAWAYS CLAY MEMBER) Complete at 0.80m	 		
						Remarks No samples were recovered. No groundwater encountered. Trial Pit remained open and stable.			
						Scale (approx) 1:20		Logged By TN	

Client Steve Newman	Job Number P21-374
Engineer PGE	Sheet 1/1

Description	Legend	Water
Grass over: Soft dark grey slightly sandy CLAY with occasional roots and rootlets up to 2mm in diameter. (TOPSOIL)		
Stiff orange brown mottled blue grey CLAY. (KELLAWAYS CLAY MEMBER)		
...2.00m: with bands of slightly sandy CLAY.		
Complete at 2.45m		1 1



Scale (approx)	Logged By	Figure No.
1:20	TN	P21-374.SA2

Infiltration Test to BRE365 - SA1 TEST 1

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0.0	0	2.00
	7.0	420	2.00
	14.0	840	2.00
	25.0	1500	2.00
	42.0	2520	2.00
	89.0	5340	2.00
	100.0	6000	2.00
	121.0	7260	2.00
	153.0	9180	2.00
	182.0	10920	2.00

Location: SA1

Weather: Overcast

Engineer: TN

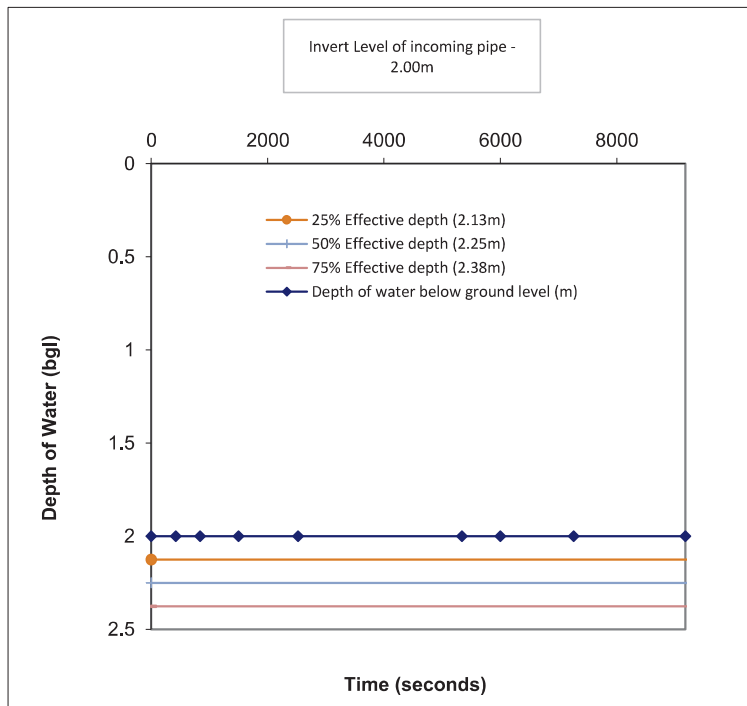
Date: 27/01/2022

TEST 1

Strata Tested Cornbrash Formation

1.30m	SA1 - 2.5 m depth Assume invert level of incoming drain is 2m bgl. Effective depth = 0.5m	Pit Depths (m bgl)
		Length
		1.40
		Width
		0.35
		Depth
		2.50
		25% Effective Depth
		2.13
		75% Effective Depth
2.38		
Inlet Depth		
2.00		
	0.35m	

Linear extrapolated values for calculation



CALCULATION:

Soil Infiltration Rate(f) =
 $V_{p75-25} / (a_{p50} \times t_{p75-25})$

Where:

V_{p75-25} = effective storage
 volume between 75% and 25%
 effective depth
 $1.4 \times 0.35 \times (2.375 - 2.125)$
 = **0.1225**

a_{p50} = internal area of TP upto
 50% effective depth + base of TP
 $2(1.4 \times) + 2(0.35 \times) + (1.4 \times 0.35)$
 = **1.365**

t_{p75-25} = the time for water level
 to fall from 75% - 25% effective
 depth
 = **>>>** secs

f= **FAILED** m/s

Comment

The water failed to infiltrate to the 25% effective
 depth within the required time.



Client: Steve Newman
Project No: P21-374
Project: Land off Rodbourne Road, Corston, Wiltshire,
 SN16 0HA

Infiltration Test to BRE365 - SA2 TEST 1

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0.0	0	1.70
	5.0	300	1.70
	22.0	1320	1.70
	38.0	2280	1.70
	55.0	3300	1.70
	83.0	4980	1.70
	105.0	6300	1.70
	122.0	7320	1.70
	135.0	8100	1.70
	165.0	9900	1.70
	210.0	12600	1.70

Location: SA2

Weather: Overcast

Engineer: TN

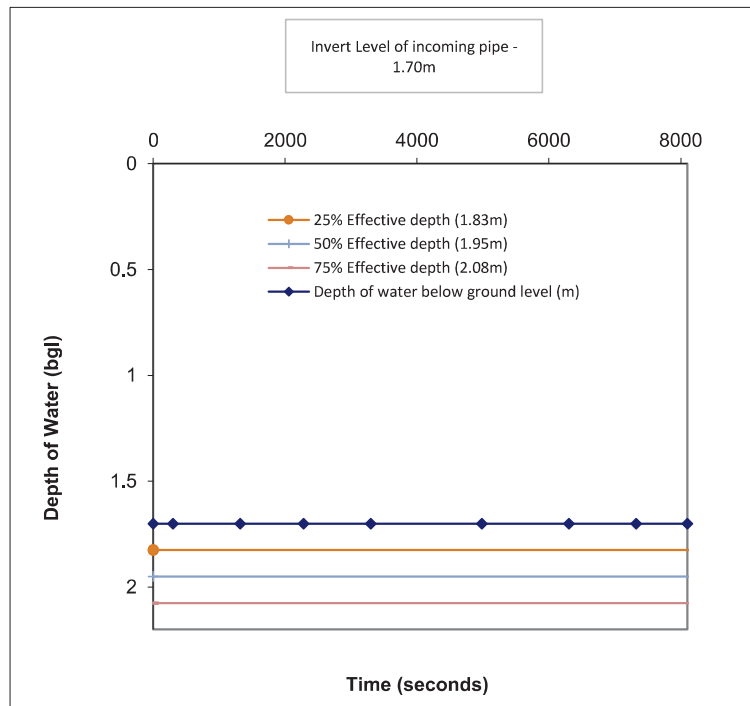
Date: 27/01/2022

TEST 1

Strata Tested Kellaways Clay Member

1.25m	SA2 - 2.2 m depth Assume invert level of incoming drain is 1.7m bgl. Effective depth = 0.5m	Pit Depths (m bgl)
		Length 1.30 Width 0.35 Depth 2.20 25% Effective Depth 1.83 75% Effective Depth 2.08 Inlet Depth 1.70
	0.35m	

Linear extrapolated values for calculation



CALCULATION:

Soil Infiltration Rate(f) =
 $V_{p75-25} / (a_{p50} \times t_{p75-25})$

Where:

V_{p75-25} = effective storage
 volume between 75% and 25%
 effective depth
 $1.3 \times 0.35 \times (2.075 - 1.825)$
 = **0.11375**

a_{p50} = internal area of TP upto
 50% effective depth + base of TP
 $2(1.3 \times) + 2(0.35 \times) + (1.3 \times 0.35)$
 = **1.28**

t_{p75-25} = the time for water level
 to fall from 75% - 25% effective
 depth
 = **>>>** secs

f= **FAILED** m/s

Comment

The water failed to infiltrate to the 25% effective
 depth within the required time.



Client: Steve Newman
Project No: P21-374
Project: Land off Rodbourne Road, Corston, Wiltshire,
 SN16 0HA

Infiltration Test to BRE365 - SA3 TEST 1

Field Data

Time	Time Elapsed (min)	Time Elapsed (sec)	Depth of Water below GL (m)
	0.0	0	0.30
	5.0	300	0.30
	26.0	1560	0.30
	47.0	2820	0.30
	62.0	3720	0.30
	79.0	4740	0.30
	95.0	5700	0.30
	121.0	7260	0.30
	165.0	9900	0.30
	201.0	12060	0.30

Location: SA3

Weather: Overcast

Engineer: TN

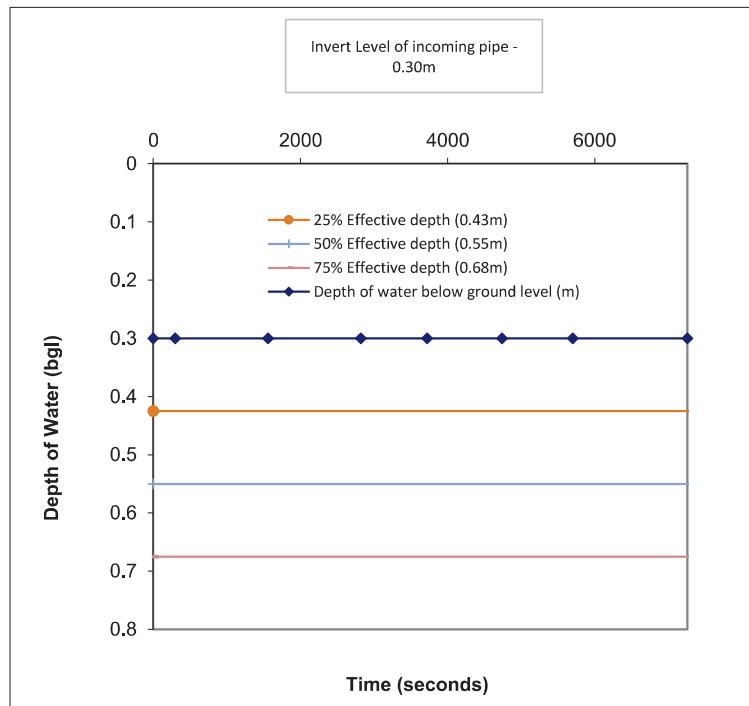
Date: 27/01/2022

TEST 1

Strata Tested Kellaways Clay Member

1.30m	SA3 - 0.8 m depth Assume invert level of incoming drain is 0.3m bgl. Effective depth = 0.5m	Pit Depths (m bgl)
		Length
		1.10
		Width
		0.35
		Depth
		0.80
		25% Effective Depth
		0.43
		75% Effective Depth
0.68		
Inlet Depth		
0.30		
	0.35m	

Linear extrapolated values for calculation



CALCULATION:

Soil Infiltration Rate(f) =
 $V_{p75-25} / (a_{p50} \times t_{p75-25})$

Where:

V_{p75-25} = effective storage volume between 75% and 25% effective depth

$$1.1 \times 0.35 \times (0.675 - 0.425) = \mathbf{0.09625}$$

$$a_{p50} = \text{internal area of TP upto 50\% effective depth + base of TP} \\ 2(1.1 \times) + 2(0.35 \times) + (1.1 \times 0.35) = \mathbf{1.11}$$

t_{p75-25} = the time for water level to fall from 75% - 25% effective depth

$$= >>> \text{secs}$$

$$f = \mathbf{FAILED} \text{ m/s}$$

Comment

The water failed to infiltrate to the 25% effective depth within the required time.



Client: Steve Newman
Project No: P21-374
Project: Land off Rodbourne Road, Corston, Wiltshire, SN16 0HA

APPENDIX E

Calculations

Infodrainage Attenuation Calculations

Project: Newlands Farm Corston	Date: 25/06/2026		
	Designed by: AD	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: Phase	: SW Attenuation Design		



P1 Catchment

Type : Catchment Area

Area (ha)	0.015
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



P1 Garage Catchment

Type : Catchment Area

Area (ha)	0.004
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



P1 Drive Catchment

Type : Catchment Area

Area (ha)	0.008
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

Project: Newlands Farm Corston	Date: 25/06/2026			
	Designed by: AD	Checked by:	Approved By:	
Report Details: Type: Inflows Storm Phase: Phase	SW Attenuation Design			



P2 Catchment

Type : Catchment Area

Area (ha)	0.031
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	10



P2 Garage Catchment

Type : Catchment Area

Area (ha)	0.006
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0



P2 Drive Catchment

Type : Catchment Area

Area (ha)	0.025
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

Project: Newlands Farm Corston	Date: 25/06/2026		
	Designed by: AD	Checked by:	Approved By:
Report Details: Type: Inflows Storm Phase: Phase	: SW Attenuation Design		



Road Catchment

Type : Catchment Area

Area (ha)	0.065
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100
Urban Creep (%)	0

Project: Newlands Farm Corston	Date: 25/06/2026		
	Designed by: AD	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	: SW Attenuation Design		



P1 Porous Paving

Type : Porous Paving

Dimensions

Exceedance Level (m)	82.600
Depth (m)	0.400
Base Level (m)	82.200
Paving Layer Depth (mm)	50
Membrane Percolation (m/hr)	1000.0
Porosity (%)	30
Length (m)	10.000
Long. Slope (1:X)	1000.00
Width (m)	7.700
Total Volume (m³)	8.085

Inlets

Inlet 1

Inlet Type	Lateral Inflow
Incoming Item(s)	P1 Drive Catchment
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet 2

Inlet Type	Lateral Inflow
Incoming Item(s)	P1 Garage Catchment P1 Catchment
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe 1
Outlet Type	Free Discharge

Advanced

Conductivity (m/hr)	1000.0
---------------------	--------

Project: Newlands Farm Corston	Date: 25/06/2026		
	Designed by: AD	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	: SW Attenuation Design		



P2 Porous Paving

Type : Porous Paving

Dimensions

Exceedance Level (m)	81.000
Depth (m)	0.500
Base Level (m)	80.500
Paving Layer Depth (mm)	50
Membrane Percolation (m/hr)	1000.0
Porosity (%)	30
Length (m)	32.000
Long. Slope (1:X)	1000.00
Width (m)	8.000
Total Volume (m³)	34.560

Inlets

Inlet 1

Inlet Type	Lateral Inflow
Incoming Item(s)	P2 Drive Catchment
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet 2

Inlet Type	Lateral Inflow
Incoming Item(s)	P2 Catchment P2 Garage Catchment
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe 2
Outlet Type	Free Discharge

Advanced

Conductivity (m/hr)	1000.0
---------------------	--------

Project: Newlands Farm Corston	Date: 25/06/2026		
	Designed by: AD	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	: SW Attenuation Design		



Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Level (m)	83.000
Depth (m)	1.200
Base Level (m)	79.400
Number of Crates Long	13
Number of Crates Wide	13
Number of Crates High	3
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	98.730

Inlets

Inlet 1

Inlet Type	Point Inflow
Incoming Item(s)	Road Catchment
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet 2

Inlet Type	Point Inflow
Incoming Item(s)	Pipe 1
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet 3

Inlet Type	Point Inflow
Incoming Item(s)	Pipe 2
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	(None)
Outlet Type	Orifice
Diameter (m)	0.046
Coefficient of Discharge	0.600
Invert Level (m)	79.400

Project: Newlands Farm Corston	Date: 25/06/2026		
	Designed by: AD	Checked by:	Approved By:
Report Title: Rainfall Analysis Criteria	: SW Attenuation Design		



Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Use Catchment Values
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall	
FSR	Type: FSR

Region	England And Wales
M5-60 (mm)	20.0
Ratio R	0.386
Summer	☒
Winter	☒

Return Period	
---------------	--

Return Period (years)	Increase Rainfall (%)
1.0	0.000
30.0	0.000
100.0	0.000
100.0	45.000

Storm Durations	
-----------------	--

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

Project: Newlands Farm Corston		Date: 25/06/2026			
		Designed by: AD	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		SW Attenuation Design			



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
P1 Porous Paving	FSR: 1 years: +0 %: 120 mins: Winter	82.304	82.216	0.094	0.016	1.3	1.255	0.000	0.000	0.8	3.412		84.472
P2 Porous Paving	FSR: 1 years: +0 %: 480 mins: Winter	80.651	80.512	0.119	0.012	1.2	6.865	0.000	0.000	0.5	10.921		80.137
Cellular Storage	FSR: 1 years: +0 %: 240 mins: Winter	79.518	79.518	0.118	0.118	3.0	9.498	0.000	0.000	1.4	20.525		90.379

Project:: Newlands Farm Corston	Date: 25/06/2026			
	Designed by: AD	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	:			
SW Attenuation Design				

Status
OK
OK
OK

Project: Newlands Farm Corston		Date: 25/06/2026			
		Designed by: AD	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		: SW Attenuation Design			



FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
P1 Porous Paving	FSR: 30 years: +0 %: 60 mins: Winter	82.395	82.230	0.185	0.030	4.6	2.449	0.000	0.000	3.0	6.491		69.709
P2 Porous Paving	FSR: 30 years: +0 %: 240 mins: Winter	80.767	80.523	0.235	0.023	4.3	13.202	0.000	0.000	1.7	19.103		61.800
Cellular Storage	FSR: 30 years: +0 %: 180 mins: Winter	79.732	79.732	0.332	0.332	8.7	26.642	0.000	0.000	2.5	36.995		73.015

Project:: Newlands Farm Corston	Date: 25/06/2026			
	Designed by: AD	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	: SW Attenuation Design			

Status
OK
OK
OK

Project: Newlands Farm Corston		Date: 25/06/2026			
		Designed by: AD	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		: SW Attenuation Design			



FSR: 100 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By:
Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
P1 Porous Paving	FSR: 100 years: +0 %: 60 mins: Winter	82.436	82.237	0.226	0.037	6.1	3.017	0.000	0.000	4.2	8.733		62.682
P2 Porous Paving	FSR: 100 years: +0 %: 180 mins: Winter	80.828	80.529	0.296	0.029	6.9	16.514	0.000	0.000	2.7	22.731		52.217
Cellular Storage	FSR: 100 years: +0 %: 180 mins: Winter	79.871	79.871	0.471	0.471	11.7	37.804	0.000	0.000	3.0	45.746		61.710

Project:: Newlands Farm Corston	Date: 25/06/2026			
	Designed by: AD	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	:			
SW Attenuation Design				

Status
OK
OK
OK

Project: Newlands Farm Corston		Date: 25/06/2026			
		Designed by: AD	Checked by:		Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		: SW Attenuation Design			



FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By:
Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
P1 Porous Paving	FSR: 100 years: +45 %: 30 mins: Winter	82.510	82.253	0.300	0.053	11.9	4.001	0.000	0.000	7.9	9.499		50.517
P2 Porous Paving	FSR: 100 years: +45 %: 120 mins: Winter	80.934	80.540	0.402	0.040	13.4	22.373	0.000	0.000	4.9	28.640	55	35.262
Cellular Storage	FSR: 100 years: +45 %: 240 mins: Winter	80.165	80.165	0.765	0.765	14.6	61.370	0.000	0.000	3.8	78.021	95	37.840

Project:: Newlands Farm Corston	Date: 25/06/2026			
	Designed by: AD	Checked by:	Approved By:	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	:			
SW Attenuation Design				

Status
OK
OK
OK



FOR MORE INFORMATION CONTACT US AT:

Enquiries@DixonCivils.com

01249 490813

www.DixonCivils.com