



Drainage Statement

Site: Brook Street Garage, Spark's Lane, Brook Street, RH17 5JP

Client: Brook Street Garage Ltd

Prepared by: DHA
Eclipse House
Eclipse Park
Sittingbourne Road
Maidstone ME14 3EN

Date: April 2025

1.1 Introduction

1.1.1 DHA has been commissioned by Brook Street Garage Ltd to prepare a drainage statement to discharge planning condition 4 in relation to planning permission reference DM/23/1400.

1.1.2 The proposals comprise of the demolition of the demolition of an existing dilapidated workshop and replacement with a new 14 x 9m workshop at Brook Street Garage, Spark's Lane, Brook Street, RH17 5JP.

1.1.3 Condition 4 attached to the planning permission is worded as follows:

"The development hereby permitted shall not commence unless and until details of the proposed foul and surface water drainage and means of disposal have been submitted to and approved in writing by the Local Planning Authority. The building shall not be occupied until all the approved drainage works have been carried out in accordance with the agreed details."

Reason: To ensure that the proposal is satisfactorily drained and to accord with the NPPF requirements and Policy DP41 of the Mid Sussex District Plan".

1.1.4 The proposals are classed as minor development and as such a drainage strategy is not normally required to support a development of this size, however even though there will be no increase in impermeable area, Mid Sussex District Council have requested that details of the surface water drainage should be provided in this case.

1.2 Summary of existing development

Location

- 1.2.1 The site is located on an existing commercial development to the North of Sparks Lane and is centred on grid reference 530505,126713. The area of the site which is to be developed occupies a total area of 126m² and currently comprises of an existing building (91m²) and associated hardstanding (35m²).

Existing Site

- 1.2.2 A topographical survey of the site is shown on drawing 34475/TS/01 contained within **Appendix A**.
- 1.2.3 The area of the site where the replacement building is to be located is at a level of circa 63.4m AOD and falls away to a low point of 62.9m AOD on the northwestern boundary. Beyond the site boundary levels fall steeply away to the Northwest towards a ditch. The existing site has the following boundary conditions.
- North - Workshop with fields beyond.
 - West - Residential property.
 - South - Workshop with Sparks Lane beyond.
 - East - Residential property.

Existing Drainage regime and surface water run-off

- 1.2.4 The existing drainage regime is shown on 34475-D-01 contained within **Appendix B**. Drainage from the existing building can be seen to discharge directly onto the adjacent hardstanding which flows into a gully within the area of existing hardstanding. This gully connects into a 150mm diameter sewer that runs from East to West along the northern boundary discharging into a watercourse adjacent to the northwestern boundary. The existing impermeable areas which comprise of roofs and hardstanding can be seen to be 0.013 hectares.
- 1.2.5 The existing green field (pre-development) peak discharge rates have been calculated by using the Flood Studies Report ICP (SuDS) method based on the proposed impermeable area of 0.013 hectares. The calculations can be seen in **Appendix B** and have been summarised in Table 1 below: [Impermeable area to be confirmed]

Catchment Reference	Area	Qbar (l/s)	1 in 1 year	1 in 30 years	1 in 100 years
Catchment A	0.013	0.1	0.1	0.2	0.2

TABLE 1 –SUMMARY OF PRE-DEVELOPMENT GREENFIELD RUNOFF RATE

Existing Public Sewers

- 1.2.6 Reference has been made to Southern Water asset plans found at **Appendix C** which indicate the location of any public sewers in the area. These records do not indicate any private drainage that may be present.
- 1.2.7 In October 2011 the ownership of any private sewer serving more than one property was automatically transferred to the Water Authority although many of these sewers are yet to be recorded on the asset plans.

Surface Water Sewers

- 1.2.8 Southern Water asset plans show there to be no surface water sewer in the site vicinity.

Foul Water Sewers

- 1.2.9 Southern Water asset plans show there to be foul water sewer running from South to North in the eastern part of the site before draining away to the West.

Geology and Hydrogeology

- 1.2.10 The online British Geological Survey maps indicate that the site is underlain by the Weald Clay Formation. This geology is not considered suitable for the use of infiltration-based SuDS.
- 1.2.11 The site can be seen to be located outside any Source Protection Zone.

1.3 Proposed Development

- 1.3.1 The proposals comprise of the demolition of the demolition of an existing dilapidated workshop and replacement with a new 14 x 9m workshop at Brook Street Garage, Spark's Lane, Brook Street, RH17 5JP. The proposed plans are contained in **Appendix D**.

Proposed Surface Water Drainage Strategy

- 1.3.2 As stated above, the proposal will not lead to an increase in impermeable area and hence an increase in the surface water flow of site, however Mid Sussex District Council have requested that the proposals are considered as new build in terms of drainage potential.
- 1.3.3 Based on the geology it is not possible for the site to drain via infiltration. Based on the drainage hierarchy it is therefore intended to drain to the existing ditch as per existing.
- 1.3.4 The proposed building will drain into the existing surface water drain located on the northern boundary via a network of new gravity drains which in turn drains into the existing watercourse to the northwest.
- 1.3.5 An oversized sewer will attenuate flows to a maximum flow rate of 2l/s for all return period up to and including the 1 in 100-year event plus and allowance for climate change.

- 1.3.6 The rate of 2l/s, which although greater than the greenfield rate, is a reduction from the existing rate as it is generally recognized that it is not considered practical to limit flows to a rate less than 2l/s.
- 1.3.7 Reference has been made to the Environment Agency's online mapping guidance for peak rainfall allowance for climate change and shows the site to be located within the Medway Management Catchment.
- 1.3.8 Given the proposed development is to have a design life beyond 2100, a 45% allowance for climate change needs to be considered in the design of the surface water drainage system for the 1 in 100-year event, and 35% allowance for the 1 in 30-year rainfall event. This is based on the upper end allowance for the 2050's epoch.

Based on the above, the drainage system has been modelled using Windes to accommodate all return periods up to and including the 1 in 100 year + 45% climate change. Calculations are shown in **Appendix F**.

Water Quality

- 1.3.9 The proposed runoff from the site will be clean roof water which is not considered a risk to the receiving watercourse.
- 1.3.10 The proposals replace a dilapidated workshop and area of hardstanding used for the storage of cars which proposed as higher risk of pollution.

1.4 Conclusions

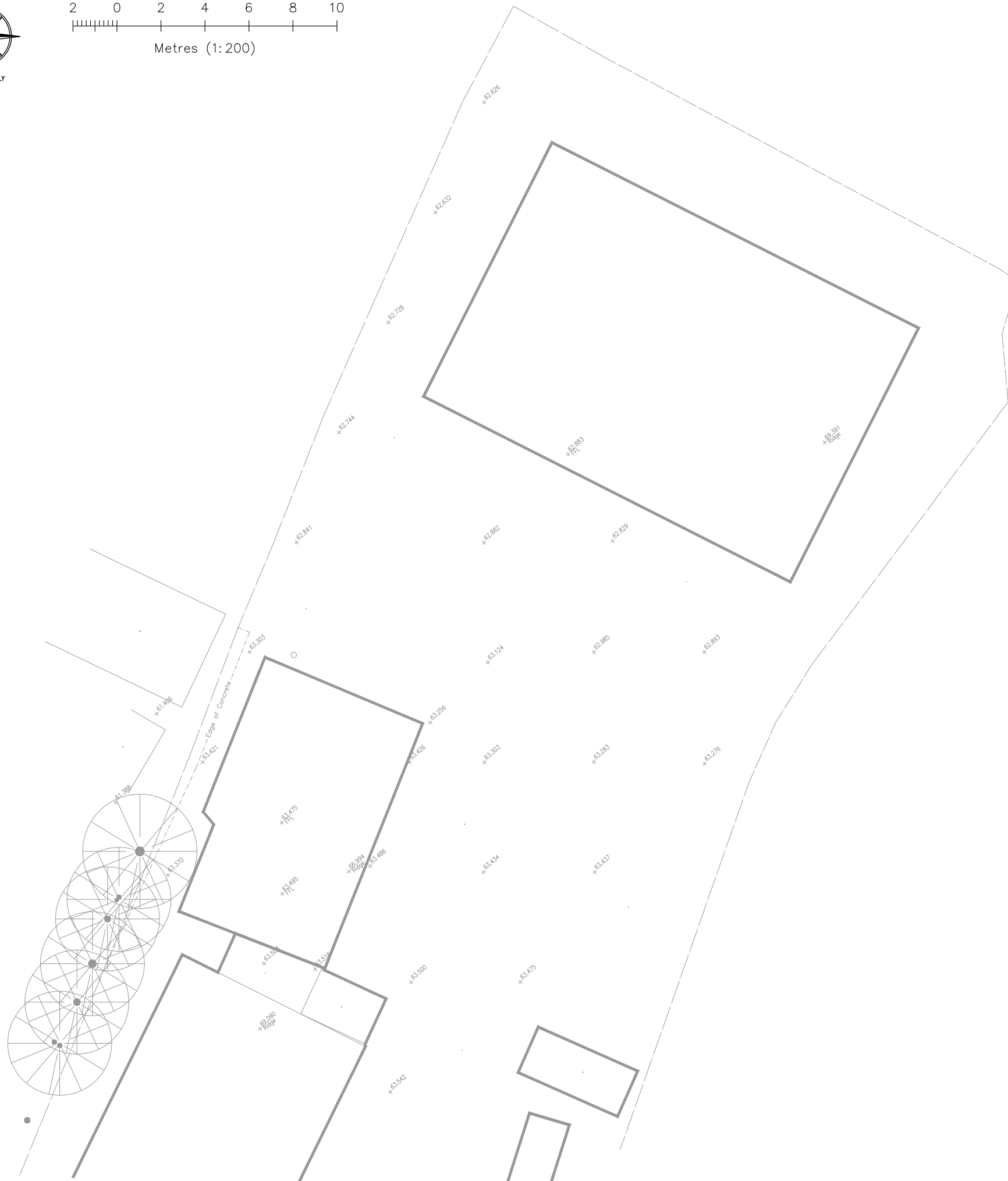
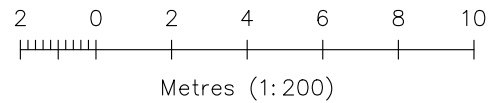
- 1.4.1 The proposals comprise of the demolition of the demolition of an existing dilapidated workshop and replacement with a new 14 x 9m workshop at Brook Street Garage, Spark's Lane, Brook Street, RH17 5JP.
- 1.4.2 The proposed building will drain into the existing surface water drain located on the northern boundary via a network of new gravity drains which in turn drains into the existing watercourse to the northwest.
- 1.4.3 The rate of 2l/s, which although greater than the greenfield rate, is a reduction from the existing rate. It is not considered practical to limit flows to a rate less than 2l/s.
- 1.4.4 This report demonstrates that the development proposals can be suitably drained and will not increase the risk of flooding either on or off site. As such the proposals accord with the requirements of the NPPF and PPG in respect of securing a suitable and sustainable drainage strategy for the development.

APPENDIX

A



Topographical Survey and Existing Floor Plans



Notes:

- This drawing has been prepared in accordance with the scope of DHA's appointment with its client and is subject to the terms and conditions of that appointment. DHA accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
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P1	16.04.25	CS	First Issue	CS	CS
REV	DATE	BY	DESCRIPTION	CHK	APD

client

BROOK STREET GARAGE LTD

project

BROOK STREET GARAGE

title

TOPOGRAPHICAL SURVEY

project 34475		drwg TS-01		rev P1
Drawn CS	Checked CS	Approved CS	scale @ A3 1:200	date 16.04.25

status	FOR INFORMATION	P
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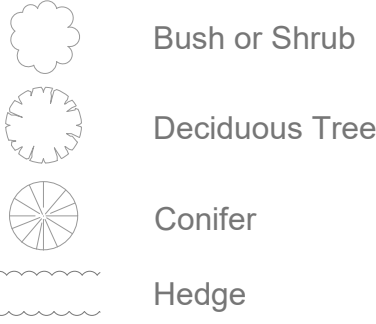
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CAD Reference:	A3
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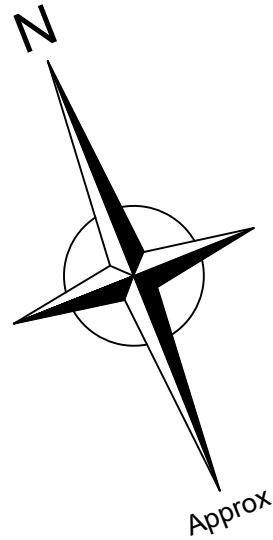
LEGEND

- SV Sluice Valve
- WO Wash Out
- RWP Rainwater Pipe
- SVP Soil Vent Pipe
- FH Fire Hydrant
- MH Manhole
- IL Invert Level
- UTL Unable to Lift
- SC Stop Cock
- GM Gas Meter
- W Water Meter
- BT Telecom Manhole
- LP Lamp Post
- G Gully
- GR Grating
- BO Bollard
- SP Sign Post
- EP Electricity Pole
- TP Telephone Pole
- O/C Overhead Cable
- FP Fence Post
- PWF Post & Wire Fence
- PRF Post & Rail Fence
- PF Picket Fence
- TPF Timber Panel Fence
- CBF Close Boarded Fence
- BWF Barbed Wire Fence
- T/F Trellis Fence
- IR Iron Railing
- FB Foot Bridge
- FP Foot Path
- DK Drop Kerb
- BOB Bottom of Bank
- TOB Top of Bank
- TOW Top of Wall
- TOF Top of Fence
- TOH Top of Hedge
- RTW Retaining Wall
- EOS Edge of Surface



- Verge or Change of Surface
- - - Edge of Surface
- - - Area or Zone
- Fence
- Minor Fence
- BT — BT Overhead Cables

- Notes:
- Levels are to the OS Datum.
 - Survey fixed to OS Grid.



- 3D Laser Scanning
- Reality Capture
- 3D Modelling
- Computer Aided Design
- Building Plans

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PROJECT:
BROOK STREET GARAGE
FORGE WORKS
SPARKS LANE
CUCKFIELD
RH17 5JP

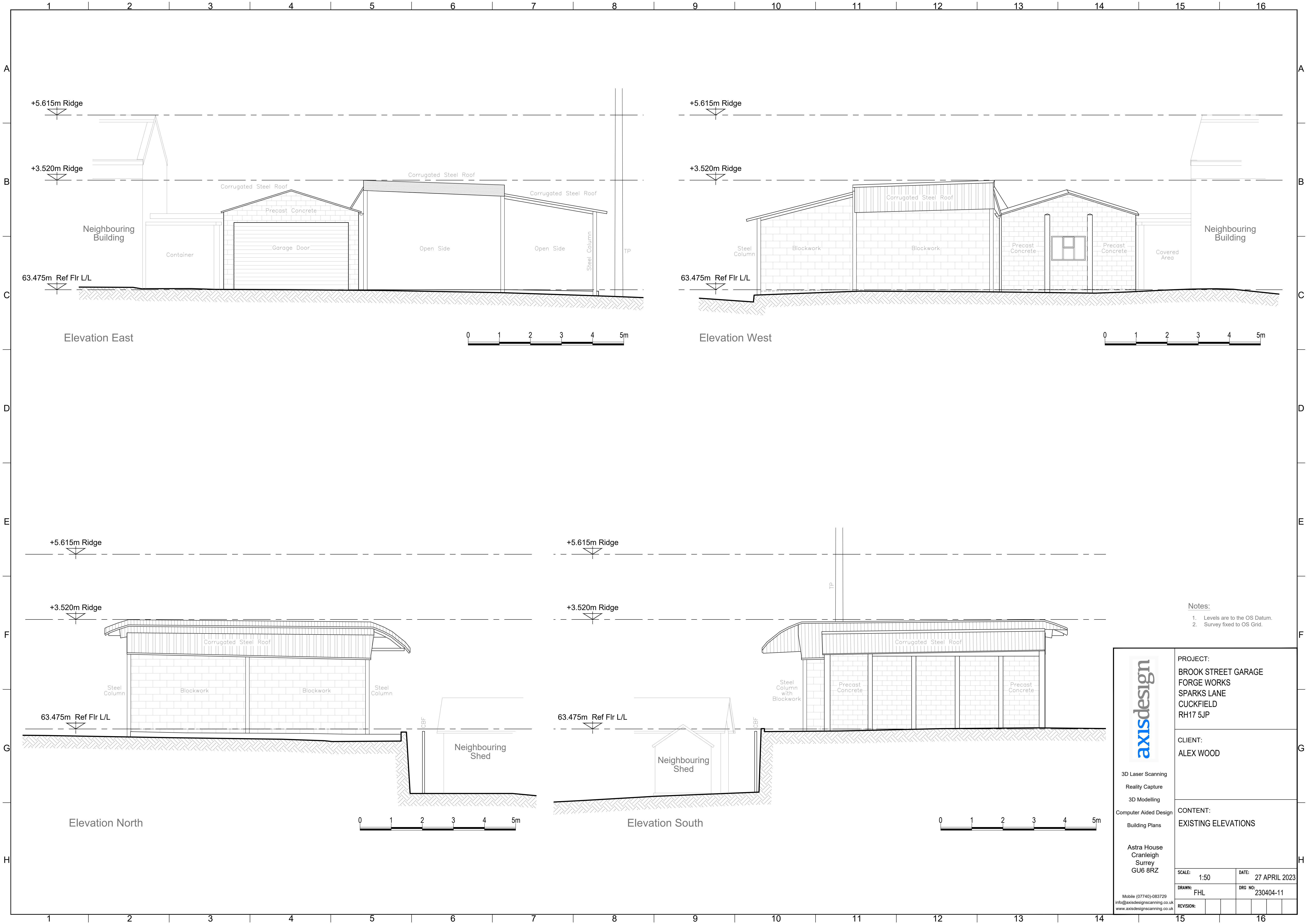
CLIENT:
ALEX WOOD

CONTENT:
EXISTING FLOOR PLAN

SCALE: 1:50 DATE: 27 APRIL 2023

DRAWN: FHL DRG NO: 230404-10

REVISION:



Notes:

- Levels are to the OS Datum.
- Survey fixed to OS Grid.

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design

3D Laser Scanning
Reality Capture
3D Modelling
Computer Aided Design
Building Plans

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PROJECT:
BROOK STREET GARAGE
FORGE WORKS
SPARKS LANE
CUCKFIELD
RH17 5JP

CLIENT:
ALEX WOOD

CONTENT:
EXISTING ELEVATIONS

SCALE: 1:50 DATE: 27 APRIL 2023

DRAWN: FHL DRG NO: 230404-11

REVISION:

APPENDIX

B



Existing Drainage Regime

DHA Transport Ltd		Page 1
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Brook Street Garage	
Date 16/04/2025 09:45 File	Designed by Chris Checked by	
Causeway	Source Control 2019.1	
ICP SUDS Mean Annual Flood Input Return Period (years) 100 Soil 0.450 Area (ha) 0.013 Urban 0.000 SAAR (mm) 817 Region Number Region 6 Results 1/s QBAR Rural 0.1 QBAR Urban 0.1 Q100 years 0.2 Q1 year 0.1 Q30 years 0.2 Q100 years 0.2		
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2 0 2 4 6 8 10
Metres (1:200)

150mmØ pipe discharging
to existing ditch

Existing rainwater pipe discharging
to adjacent impermeable ground

Existing buiding

Existing channel drain on building
threshold

Existing roof are 91m2 draining
onto concrete surface and over
land into existing road gully

Existing hardstanding draining into
existing road gully

ONLY SCALE FOR PLANNING PURPOSES

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client
BROOK STREET GARAGE LTD

project
BROOK STREET GARAGE

title
EXISTING DRAINAGE REGIME

project	drwg	rev
34475	D-01	P1

Drawn	Checked	Approved	scale @ A3	date
CS	CS	CS	1:200	16.04.25

status
FOR INFORMATION
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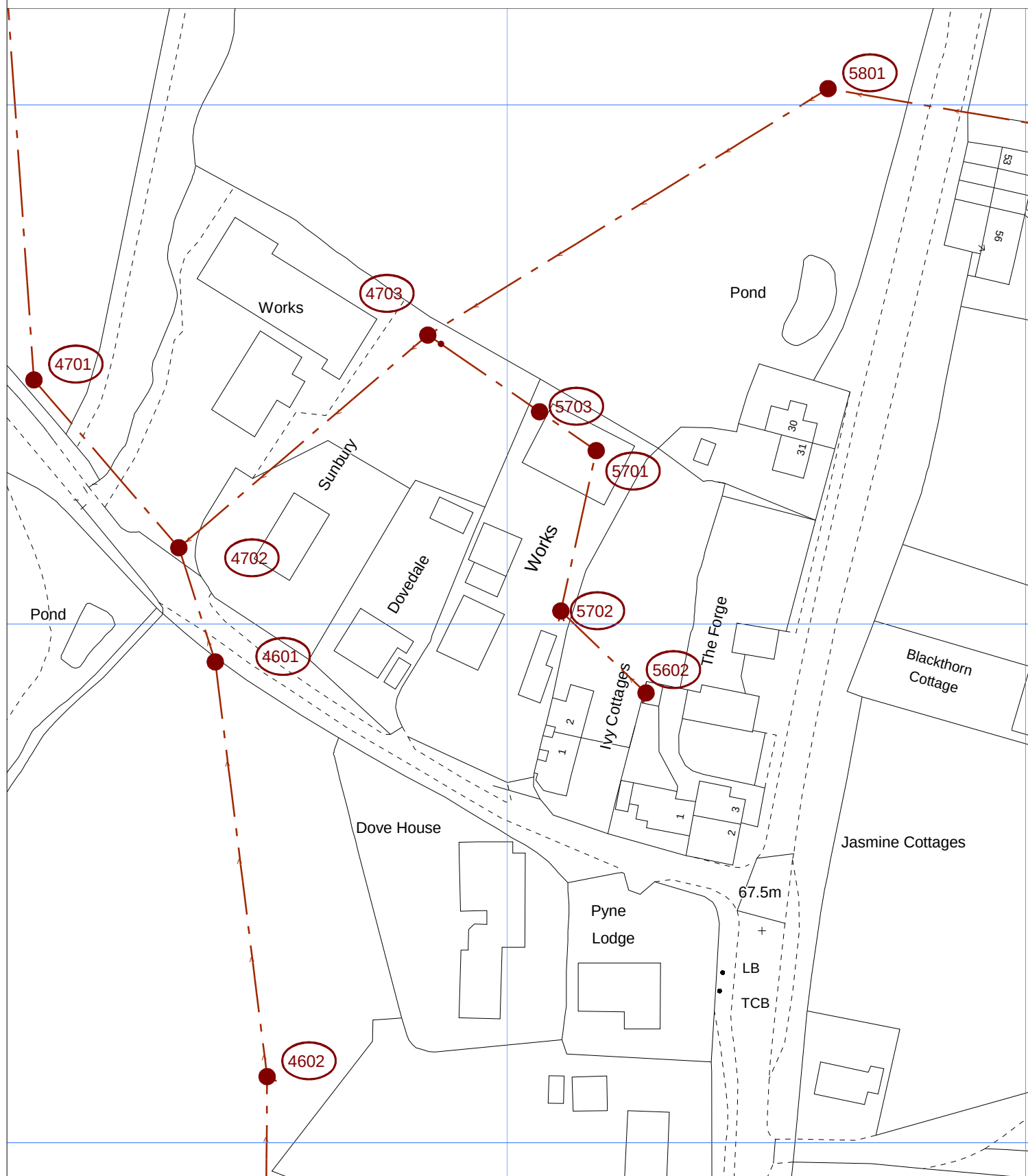
CAD Reference:	A3
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APPENDIX C



Southern Water Asset Plans

SOUTHERN WATER



The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site.

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O.S. REF: TQ3026NE

Scale: 1:1000

Screen Print

WARNING: BAC pipes are constructed of Bonded Asbestos Cement

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement



Printed By: BoregoS

Date: 27-6-2023

Southern Water MapGuide Browser

Requested By:

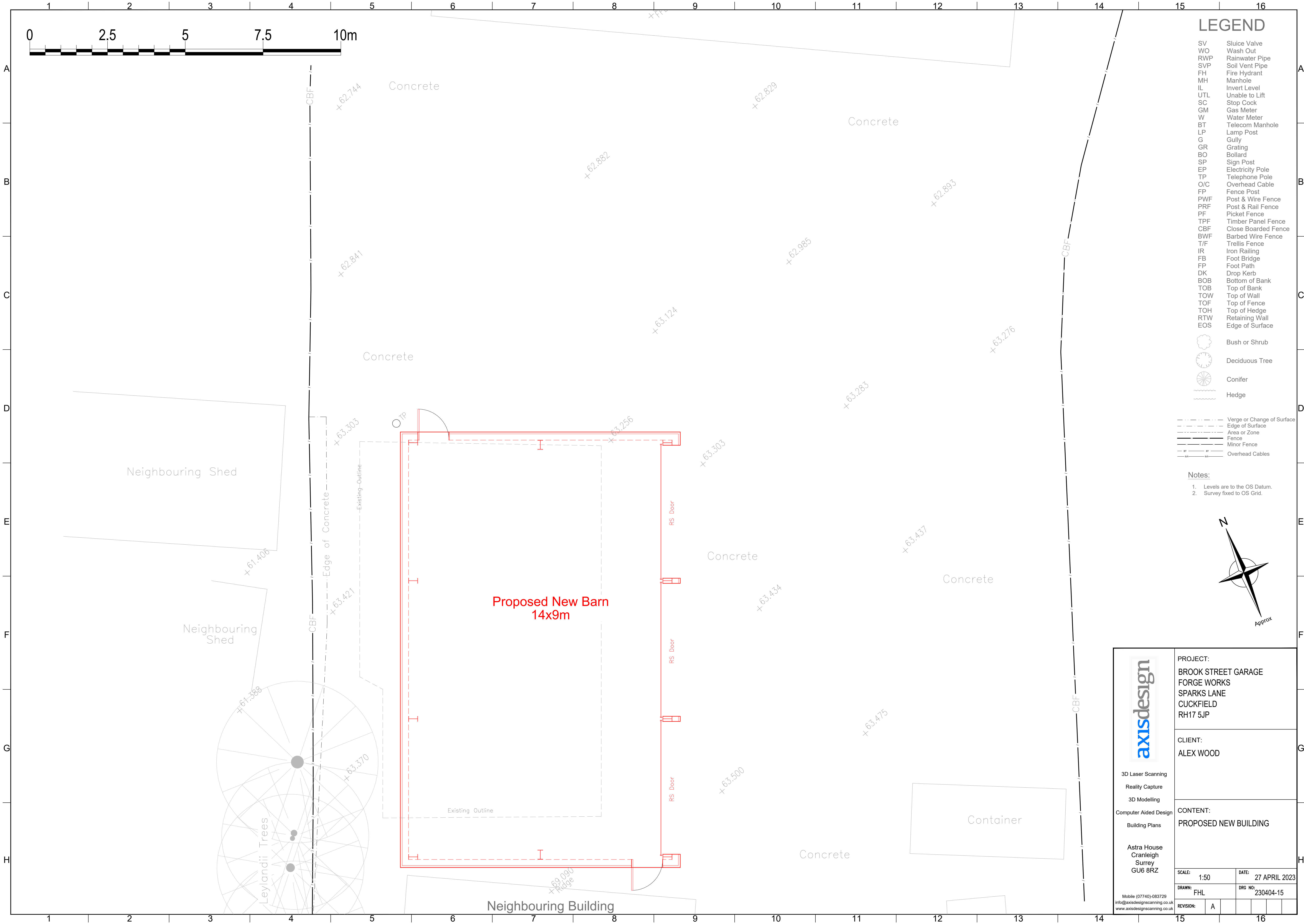


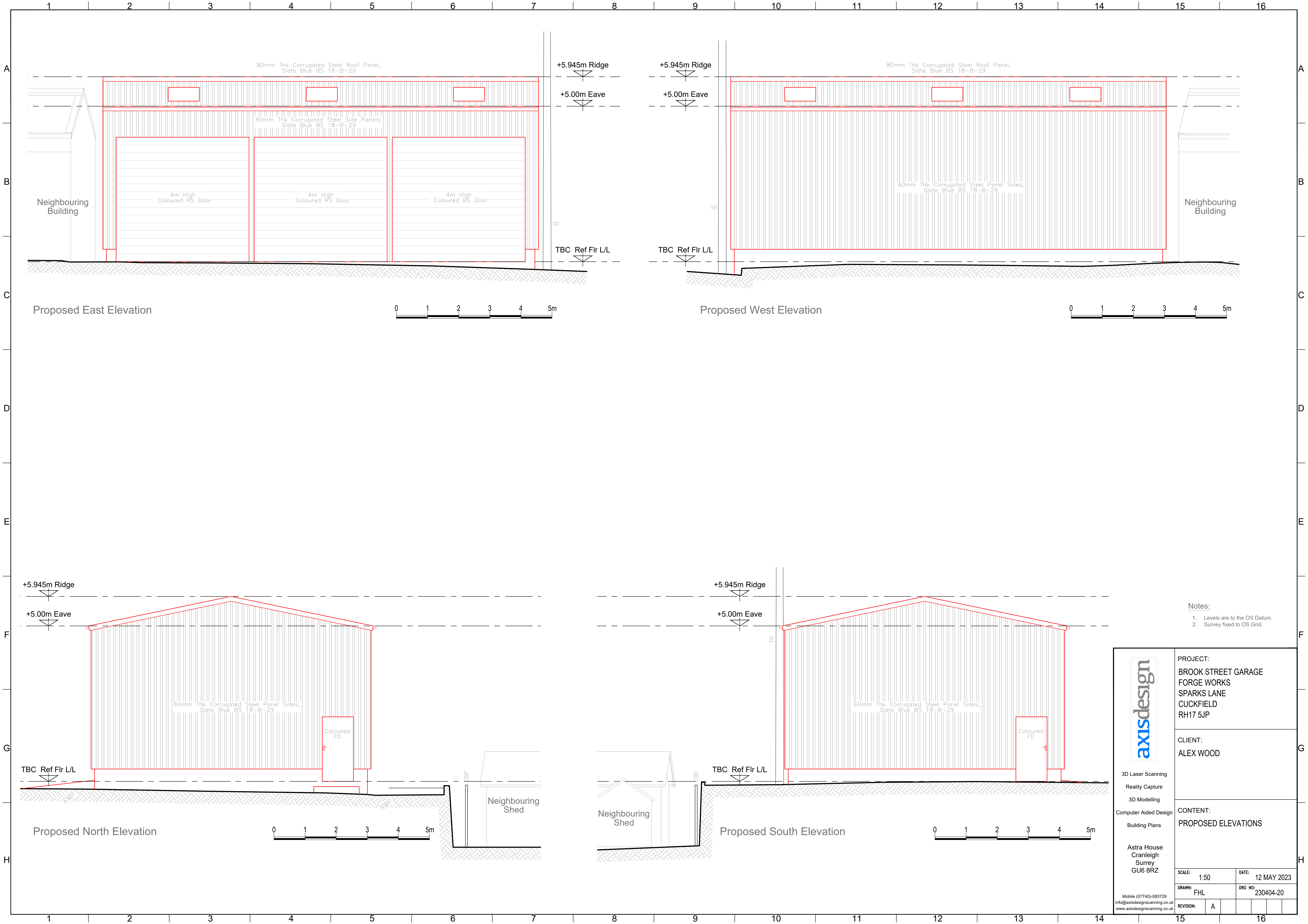
APPENDIX

D



Proposed Masterplan





APPENDIX E



Proposed Drainage Plan



2 0 2 4 6 8 10
Metres (1:200)

150mmØ pipe discharging
to existing ditch

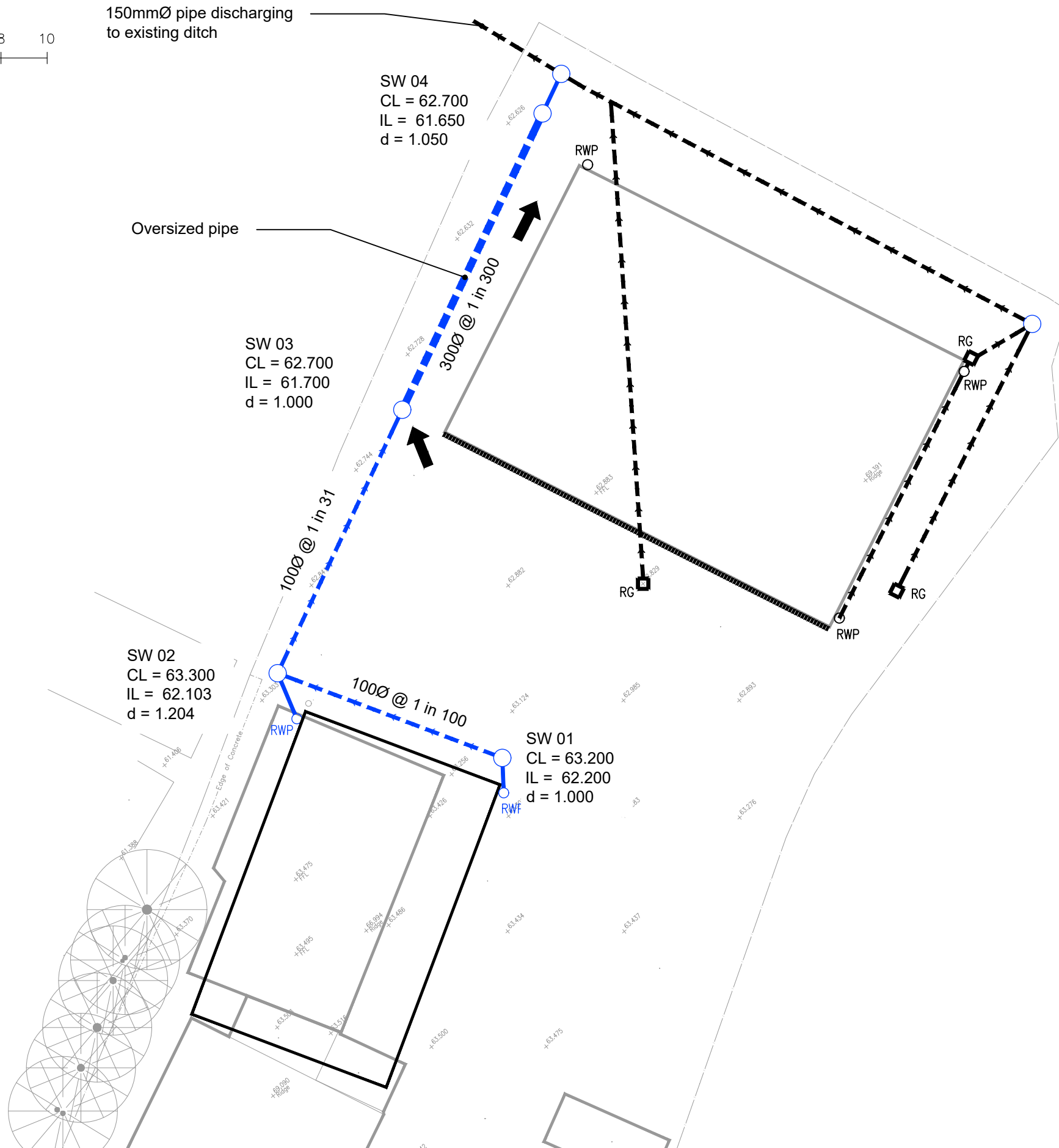
Oversized pipe

SW 03
CL = 62.700
IL = 61.700
d = 1.000

SW 04
CL = 62.700
IL = 61.650
d = 1.050

SW 02
CL = 63.300
IL = 62.103
d = 1.204

SW 01
CL = 63.200
IL = 62.200
d = 1.000



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REV	DATE	BY	DESCRIPTION	CHK	APD

client
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project
BROOK STREET GARAGE

title
PROPOSED DRAINAGE PLAN

project 34475		drwg D-02		rev P1
Drawn CS	Checked CS	Approved CS	scale @ A3 1:200	date 16.04.25

status	
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CAD Reference: A3

DHA Transport Ltd		Page 2
Eclipse House Sittingbourne Road Maidstone ME14 3EN	Brook Street Garage	
Date 16/04/2025 11:16 File 25.04.16 SWS.MDX	Designed by Chris Checked by	
Causeway Network 2019.1		

Online Controls for Storm

Hydro-Brake® Optimum Manhole: 4, DS/PN: 1.003, Volume (m³): 2.0

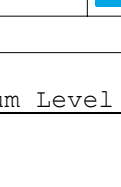
Unit Reference	MD-SHE-0067-2000-1000-2000
Design Head (m)	1.000
Design Flow (l/s)	2.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	67
Invert Level (m)	61.653
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	2.0
Flush-Flo™	0.296	1.9
Kick-Flo®	0.599	1.6
Mean Flow over Head Range	-	1.7

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.6	1.200	2.2	3.000	3.3	7.000	4.9
0.200	1.9	1.400	2.3	3.500	3.5	7.500	5.1
0.300	1.9	1.600	2.5	4.000	3.8	8.000	5.2
0.400	1.9	1.800	2.6	4.500	4.0	8.500	5.4
0.500	1.8	2.000	2.7	5.000	4.2	9.000	5.5
0.600	1.6	2.200	2.9	5.500	4.4	9.500	5.7
0.800	1.8	2.400	3.0	6.000	4.6		
1.000	2.0	2.600	3.1	6.500	4.7		

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DHA Transport Ltd		Page 4
Eclipse House Eclipse Park Sittingbourne Road Maidstone ME14 3EN		
Date 16/04/2025 11:16 File 25.04.16 SWS.MDX		
Brook Street Garage		Designed by Chris
Checked by		
Causeway		Network 2019.1

30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.328
Region	England and Wales Cv (Summer) 1.000		
M5-60 (mm)	20.000	Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)

Duration(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440	Summer and Winter
Return Period(s) (years)	1, 30, 100	
Climate Change (%)	0, 35, 45	

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	1	15 Summer	30	+35%	30/15 Summer				62.359
1.001	2	15 Summer	30	+35%	100/15 Summer				62.165
1.002	3	30 Summer	30	+35%	30/30 Summer				62.041
1.003	4	30 Summer	30	+35%	30/15 Summer				62.040

PN	US/MH Name	Depth (m)	Surcharged Volume (m³)	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	1	0.059	0.000	1.24		7.0		SURCHARGED	
1.001	2	-0.038	0.000	0.69		7.1		OK	
1.002	3	0.041	0.000	0.10		5.3		SURCHARGED	
1.003	4	0.287	0.000	0.49		1.9		SURCHARGED	

DHA Transport Ltd

Page 5

Eclipse House Eclipse Park
Sittingbourne Road
Maidstone ME14 3EN

Brook Street Garage

Date 16/04/2025 11:16
File 25.04.16 SWS.MDX

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Causeway

Network 2019.1

Micro Drainage

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coefficient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Storage Structures 0
Number of Online Controls 1 Number of Time/Area Diagrams 0
Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.328
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 20.000 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 35, 45

US/MH

PN

Name

Storm

Return Period

Climate Change

First (X) Surge

First (Y) Flood

First (Z) Overflow

Overflow Act.

Water Level (m)

1.000

1

15 Summer

100

+45%

30/15 Summer

62.490

1.001

2

30 Summer

100

+45%

100/15 Summer

62.361

1.002

3

30 Summer

100

+45%

30/30 Summer

62.346

1.003

4

30 Summer

100

+45%

30/15 Summer

62.345

US/MH

PN

Name

Depth (m)

Flooded Volume (m³)

Flow / Cap.

Overflow (l/s)

Pipe Flow (l/s)

Status

Level Exceeded

1.000

1

0.190

0.000

1.66

9.3

SURCHARGED

1.001

2

0.158

0.000

0.77

7.9

SURCHARGED

1.002

3

0.346

0.000

0.12

6.3

SURCHARGED

1.003

4

0.592

0.000

0.49

1.9

FLOOD RISK

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