Glanville
Survey > Plan > Engineer

Issue 2: 26 February 2025

SUDS VERIFICATION STATEMENT

Mowbray, North Horsham, West Sussex – Left-In Left-Out Junction



Prepared for: Legal & General (Strategic Land North Horsham) Limited

Ref: 181_8220585_CS_SuDS_Verification_Statement_LILO

Document History

Issue	Date	Description	Prepared By	Checked By
1	28 Jan 25	First issue - Draft	C Salt	J Birch
2	26 Feb 25	Revised to client comment	C Salt	J Birch

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1.0 Introduction

1.1 This SuDS Verification Statement has been prepared by Glanville Consultants on behalf of Legal & General (Strategic Land North Horsham) Limited to support an application for the discharge of Condition 37 attached to the outline planning consent for development at Mowbray, North Horsham, West Sussex.

1.2 Outline planning permission was granted in March 2018 for the following development on Land North of Horsham (planning application reference: DC/16/1677):

"Outline planning application with all matters reserved except access for a mixed use strategic development to include housing (up to 2,750 dwellings), business park (up to 46,450m^2), retail, community centre, leisure facilities, education facilities, public open space, landscaping and related infrastructure."

1.3 Condition 37 of the outline consent is as follows:

"Prior to the occupation of any building within the application site, a Verification Report demonstrating that the SuDS drainage system for the SuDS catchment area within which that building lies has been constructed in accordance with the approved design drawings for that particular catchment area shall be submitted to and approved, in writing, by the Local Planning Authority.

1.4 A planning application for approval of Reserved Matters for the Left-In Left-Out junction and the Sports Hub was approved in December 2022 (Ref. DC/22/1026). This application covered two distinct drainage catchments, one serving the Left-In Left-Out junction, and one serving the Sports Hub. This report is prepared to verify the SuDS construction details for the Left-In Left-Out junction catchment only.

1.5 The Sports Hub catchment will be constructed at a later stage and as such will be subject to a separate Condition 37 discharge application.

2.0 Drainage Design

2.1 The drainage strategy approved as part of the Reserved Matters application (Ref. DC/22/1026) is set out in Stantec's Drainage Statement (Ref. 25216/2001/ME/DS) and illustrated on drawing Ref. 25216/2001/SH/500 and 25216/2001/SH/505. An extract of the former drawing is shown in Figure 1, and both drawings are included in Appendix A.

2.2 The Left-In Left-Out junction was proposed to drain to an attenuation pond which subsequently discharges into Channells Brook. The pond and pipe infrastructure serving the Left-In Left-Out junction was also proposed to accommodate surface water run-off from future road infrastructure and commercial development parcels to the east, the details of which were not subject to this Reserved Matters application.

2.3 The attenuation pond included an area of permanent water.

2.4 The flow control from this pond was proposed to restrict the discharge rate to the greenfield run-off rate of 5.2 l/s/ha (QBAR) up to and including the 1 in 100 year design storm +20% climate change allowance with the required storage provided within the attenuation pond.

2.5 The Drainage Statement estimated the proposed impermeable area to be 3.3 ha, resulting in a proposed discharge rate of 17.4 l/s and a required storage volume in the 1 in 100 year +20% climate change event of 2332m^3.

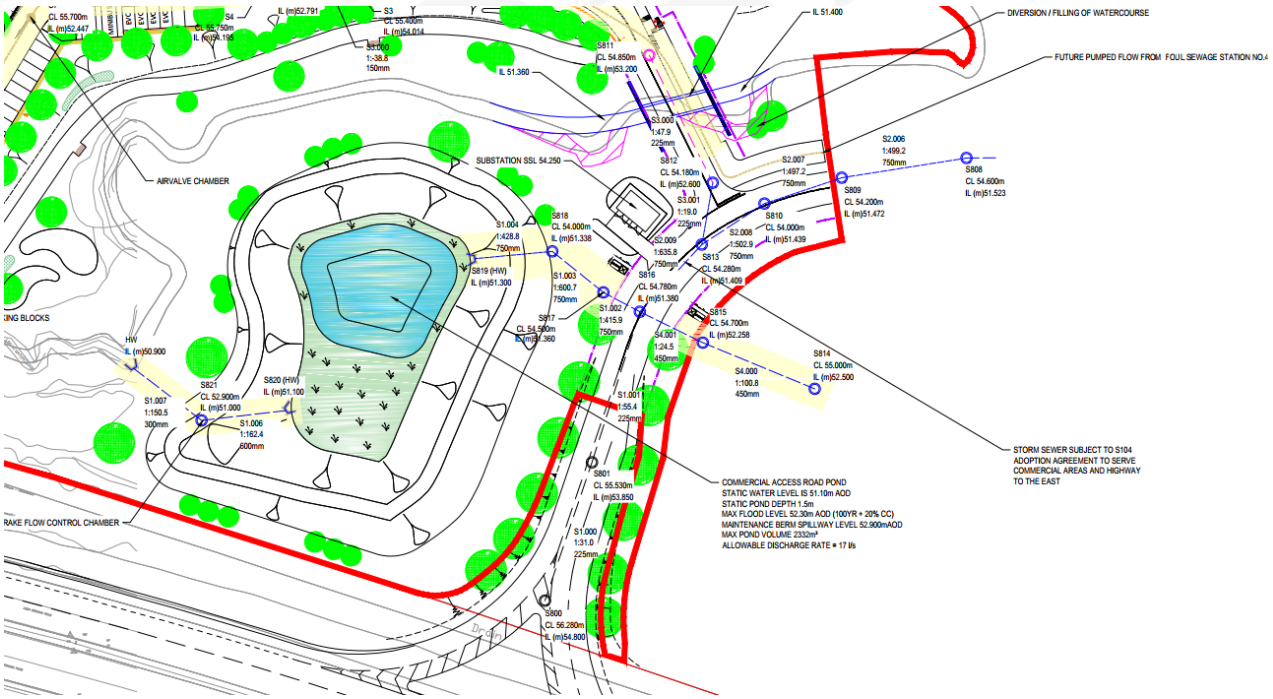


Figure 1: Extract from Stantec Drawing 25216/2001/SH/500

2.6 During the detailed design process, the design of the development parcels upstream of the pond were developed further, which resulted in a change in the catchment area draining to the Left-In Left-Out attenuation pond to 3.833ha.

2.7 As such, in-line with the approved principles of the Reserved Matters application, the allowable discharge rate was assessed at 19.8 l/s (QBAR, 5.2 l/s/ha) up to and including the 1 in 100 year +20% climate change event, with an associated required storage volume of 2843m^3.

2.8 The drainage design drawing for construction for the proposed drainage are included in Appendix B.

2.9 The water level in the pond during the 1 in 100 year plus climate change event is 52.535 mAOD, with 2843m^3 of storage provided between this level and the static water level. The minimum top of bank level is 52.900 mAOD, therefore providing 365mm of freeboard.

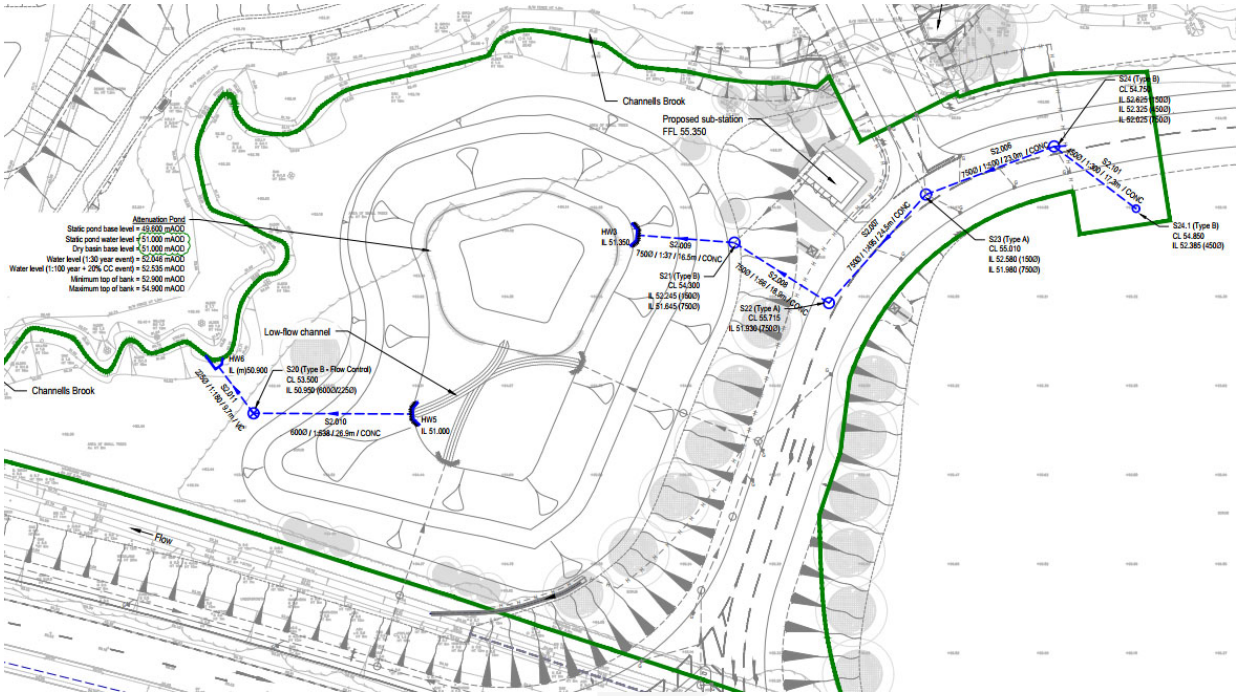


Figure 2: Extract from Pond Design Drawing

3.0 Verification of Surface Water Drainage Installation

3.1 The installation of the surface water drainage system has been inspected by Glanville at regular site visits, which has provided a weekly photographic record of the installation as construction works progressed. The photographic record is provided at Appendix C.

3.2 The photographs confirm that the surface water drainage system has been implemented in accordance with the approved strategy, including installation of the flow control device.

3.3 An as-built survey of the pond has been undertaken, which is included in Appendix D. This survey verifies that the pond has been constructed in accordance with the approved strategy. A volume of 2854m^3 of storage provided between the design flood level (52.535mAOD) and the static water level, exceeding the required storage volume (2843m^3). This also exceeds the approved planning design volume of 2332m^3. The minimum top of bank level is 52.900 mAOD, in-line with the design.

3.4 It is therefore considered that the as-built Left-In Left Out pond has the required capacity as outlined in the approved drainage strategy.

4.0 Conclusions

5.1 This Drainage Verification Statement has been prepared by Glanville Consultants on behalf of Legal & General (Strategic Land North Horsham) Limited to support an application for the discharge of Condition 37 attached to the outline planning consent for development at Mowbray, North Horsham, West Sussex.

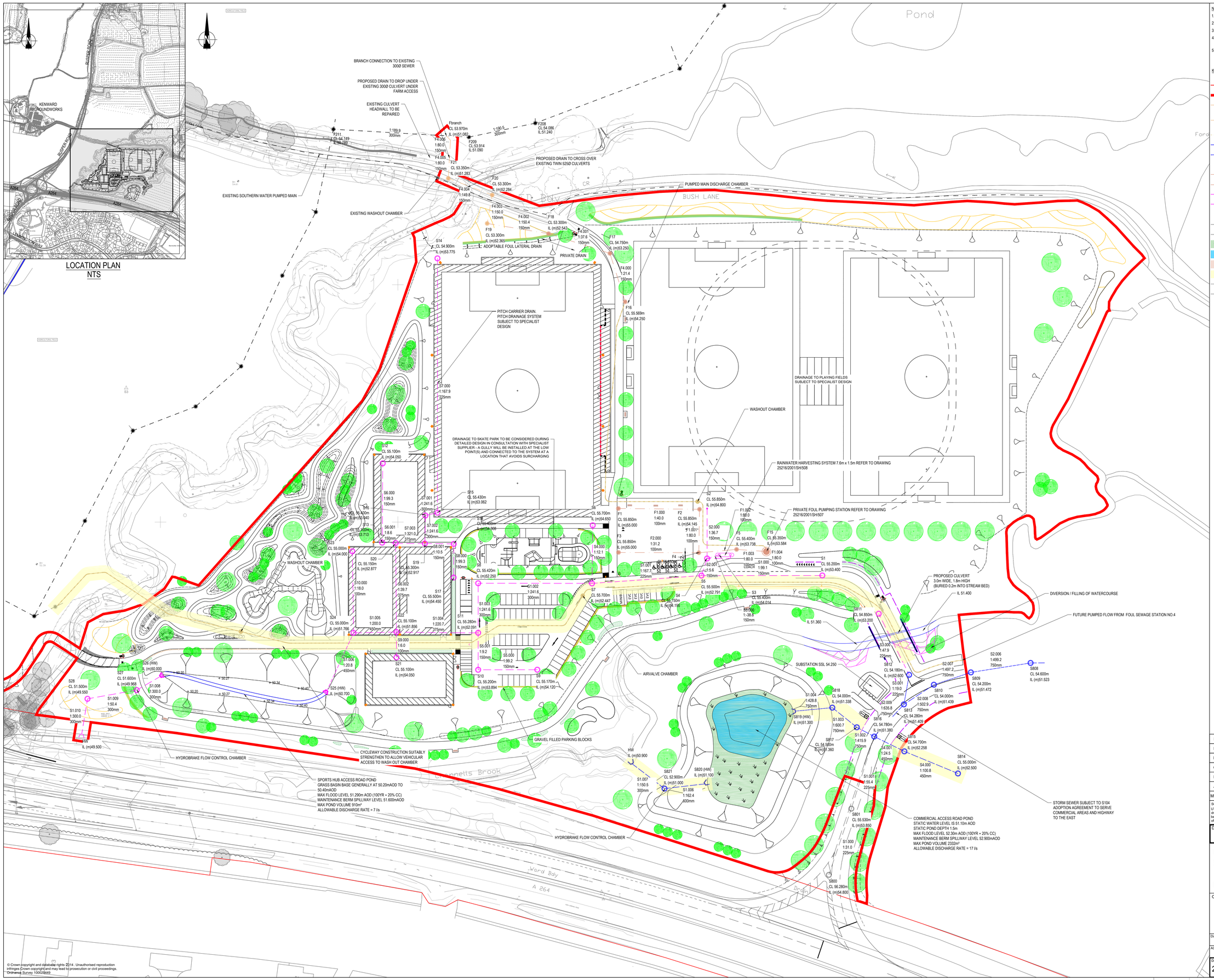
5.2 This Drainage Verification Statement provides information to enable the partial discharge of Condition 37 insofar as it relates to the Left-In Left-Out junction catchment within Phase 2 of the development.

5.3 It is concluded that the surface water drainage system that serves the Left-In Left-Out junction has been installed in accordance with the approved strategy and therefore Condition 37 of the outline planning permission can be discharged insofar as it relates to this phase of works.

Appendices

Appendix A

Approved Surface Water Strategy Drawings



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NOTES

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3. DO NOT SCALE FROM THIS DRAWING USE ONLY PRINTED DIMENSIONS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER PLANNING DRAWINGS AND DOCUMENTS.
5. DESIGNED IN ACCORDANCE WITH SEWER DESIGN GUIDANCE MARCH 2021.

KEY:

- EXISTING HIGHWAY BOUNDARY
- PLANNING APPLICATION BOUNDARY
- PROPOSED ADOPTABLE FOUL WATER SEWER (SUBJECT TO PAW2 S104 ADOPTION AGREEMENT).
- PROPOSED ADOPTABLE FOUL WATER - MANHOLE (SUBJECT TO PAW2 S104 ADOPTION AGREEMENT).
- RISING MAIN
- PROPOSED ADOPTABLE SURFACE WATER SEWER
- PROPOSED ADOPTABLE SURFACE WATER MANHOLE
- PROPOSED ADOPTABLE HEADWALL
- PROPOSED FOUL PRIVATE SEWER
- PROPOSED FOUL PRIVATE SEWER - MANHOLE
- PROPOSED SURFACE PRIVATE SEWER
- PROPOSED SURFACE PRIVATE WATER SEWER - MANHOLE
- PROPOSED SURFACE PRIVATE WATER SEWER - HEADWALL
- PROPOSED HIGHWAY DRAIN
- PROPOSED HIGHWAY DRAIN - MANHOLE
- PROPOSED REED BED
- PROPOSED POND
- PROPOSED GRAVEL POROUS PAVING
- PROPOSED 6m EASEMENT
- EXISTING FOUL WATER SEWER
- EXISTING FOUL WATER MANHOLE

Mark	Revision	Date	Drawn	Chkd	Appd
F	AMENDED TO SUIT UPDATED LAYOUT	05.08.22	JM	SPR	PK
E	GENERAL AMENDMENTS	13.05.22	JLW	PJG	PK
D	LAYOUT AMENDED	29.04.22	RMLM	IJF	PK
C	CYCLEWAY WIDTH AMENDED. VERGE REDUCED. F16 TO F BRANCH AMENDED	01.04.22	RMLM	IJF	PK
B	GENERAL AMENDMENTS	25.03.22	RMLM	IJF	PK
A	GENERAL AMENDMENTS	18.03.22	RMLM	PJG	PK

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UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake their own investigation where the presence of any existing sewers, services, plant or apparatus may affect their operations.

Drawing Issue Status

PLANNING

NORTH HORSHAM
SPORTS HUB

DRAINAGE PLAN

Client

Legal & General
STRATEGIC LAND NORTH HORSHAM LTD

Stantec

Date of 1st Issue	Designed	Drawn
11.03.2022	IJF	RMLM
AO Scale	Checked	Approved
1:500	PJG	PK

Drawing Number: 25216/2001/SH/500
Revision: F

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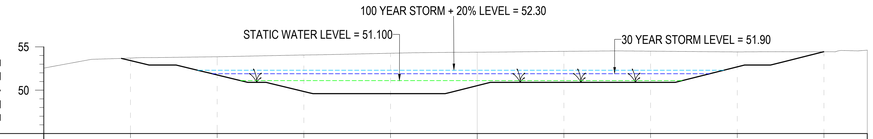
READING
Tel: 01189 500 761

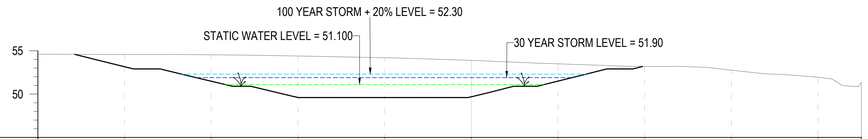
File Location: j:\25216 north horsham\00 - detailed design\03 - cad\dwgs\sports hub\25216_2001_sh_500.dwg



CHAINAGE	00.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	95.000
EXISTING LEVELS	52.539	53.710	53.859	54.060	54.263	54.384	54.481	54.501	54.418	54.443	54.620
PROPOSED LEVELS		53.416	51.759	49.848	49.600	50.522	50.900	50.900	52.689		

BASE OF POND = 49.60

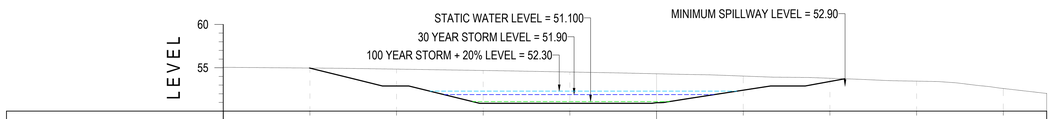
SECTION A-A
SCALE: H 1:500, V 1:500. DATUM: 45.000



CHAINAGE	00.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	95.000
EXISTING LEVELS	54.603	54.566	54.537	54.395	54.194	53.891	53.492	53.190	52.765	51.951	51.336
PROPOSED LEVELS		53.153	51.484	49.604	49.600	49.686	51.497				

BASE OF POND = 49.60

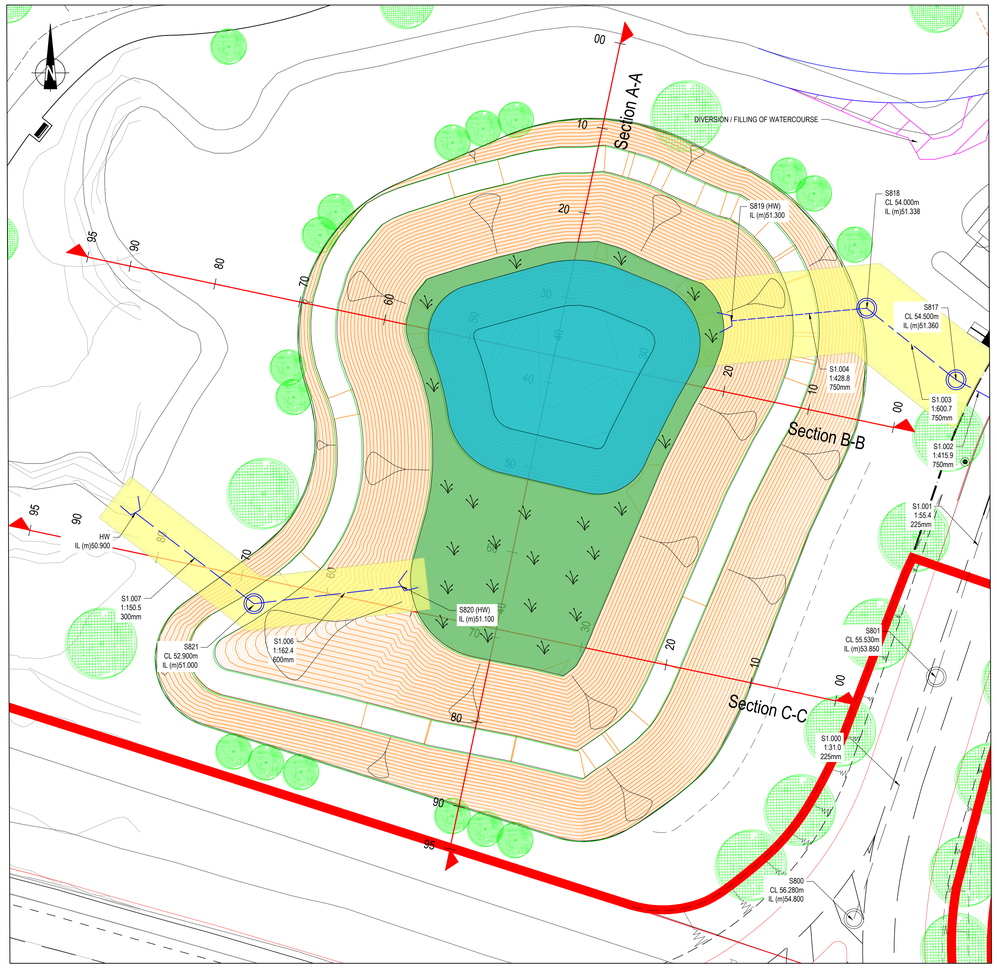
SECTION B-B
SCALE: H 1:500, V 1:500. DATUM: 45.000



CHAINAGE	00.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	95.000
EXISTING LEVELS	55.051	54.969	54.844	54.687	54.509	54.307	54.043	53.791	53.456	52.610	52.038
PROPOSED LEVELS		54.961	52.900	50.900	50.900	50.974	52.415	53.415			

BASE OF POND = 49.60

SECTION C-C
SCALE: H 1:500, V 1:500. DATUM: 50.000



PLAN
1:250

100 YEAR STORM + 20% FLOOD VOLUME = 2332m³ @MAX QBAR FLOW = 17.4 L / S

NOTES
1. ALL EXISTING DIMENSIONS AND LEVELS SHOULD BE VERIFIED ON SITE.
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4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER PLANNING DRAWINGS AND DOCUMENTS. REFER TO RELEVANT DRAWINGS FOR DETAILS OF WORKS.
5. DESIGNED IN ACCORDANCE WITH SEWER DESIGN GUIDANCE MARCH 2021.

KEY:
- EXISTING HIGHWAY BOUNDARY (ASSUMED)
- PROPOSED WORKS BOUNDARY
- PROPOSED ADOPTABLE SURFACE WATER SEWER
- PROPOSED ADOPTABLE SURFACE WATER MANHOLE
- PROPOSED ADOPTABLE HEADWALL
- PROPOSED SURFACE PRIVATE SEWER
- PROPOSED SURFACE PRIVATE WATER SEWER - MANHOLE
- PROPOSED SURFACE PRIVATE WATER SEWER - HEADWALL
- PROPOSED HIGHWAY DRAIN
- PROPOSED HIGHWAY DRAIN - MANHOLE
- RISING MAIN
- PROPOSED CONTOUR: 0.025m INTERVAL
- PROPOSED CONTOUR: 0.100m INTERVAL
- PROPOSED REED BED
- PROPOSED POND
- PROPOSED 6m EASEMENT

Mark	Revision	Date	Drawn	Chkd	Appd
A	LAYOUT AMENDED	29.04.22	RMLM	IJF	PK

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Drawing Issue Status
PLANNING

NORTH HORSHAM
SPORTS HUB
COMMERCIAL POND
PROPOSED PLAN & SECTIONS

Client
Legal & General

Stantec
stantec.com/uk

Date of 1st Issue	Designed	Drawn
11.03.2022	RMLM	IJF
AO Scale	Checked	Approved
AS SHOWN	IJF	PK

Drawing Number: 25216/2001/SH/505
Revision: A

READING
Tel: 01189 500 761

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Appendix B

Drainage Drawings for Construction



SCALE 1:10000

Attenuation Pond
Static pond base level = 49.600 mAOD
Static pond water level = 51.000 mAOD
Dry basin base level = 51.000 mAOD
Water level (1:30 year event) = 52.046 mAOD
Water level (1:100 year + 20% CC event) = 52.535 mAOD
Minimum top of bank = 52.900 mAOD
Maximum top of bank = 54.900 mAOD

Channells Brook
New alignment of Channells Brook
Channells Brook
Proposed sub-station
FFL 55.350
RWP
RWP
S31 (Type E)
CL 55.275
IL 53.925 (150Ø)
150Ø
1 in 15.1%
Low-flow channel
Channells Brook
Flow
Flow
Channells Brook
Flow
Flow
A264

10.0 0.0 10.0 20.0 30.0 40.0 50.0
Scale = 1:500 @ A1

N

NOTES

1. This drawing is to be read in conjunction with all relevant documents and specifications.
2. Dimensions are not to be scaled.
3. All works shall be in accordance with Volume 1 of Manual of Contract Documents for Highways Works - Specification for Highway Works (MCHW) and West Sussex County Council's specific requirements including current standard details and guidance documents as appropriate.
4. All pipework be to be vitrified clay unless otherwise indicated.
5. For details of adoptable highway and S278 works including drainage, refer to drawing series LILO-6300.
6. For details of S104 drainage, refer to drawing series LILO-1010.

Source: MK Surveys drawing no. 31246 Sheets 6 & 7

KEY

- Existing surface water sewer
- Highway drainage
- S104 drainage
- Private drainage
- Proposed inspection chamber Type E. (see drawing no. Mowbray-GLA-LILO-Ph2-D-C-1002). Manhole rings to be Perfect Manhole or similar approved.
- Proposed precast concrete Althon headwall
- Wooden fencing to headwalls (3 rail split chestnut)

Rev.	Description	Date	Chkd
C3	Static pond water level and dry basin base level raised to 51.000mAOD.	17/05/2024 D.Strange	CS
C2	1no. manhole and stone surround outfall removed.	10/11/2023 D.Strange	CS
C1	Issued for CONSTRUCTION.	22/09/2023 D.Strange	CS

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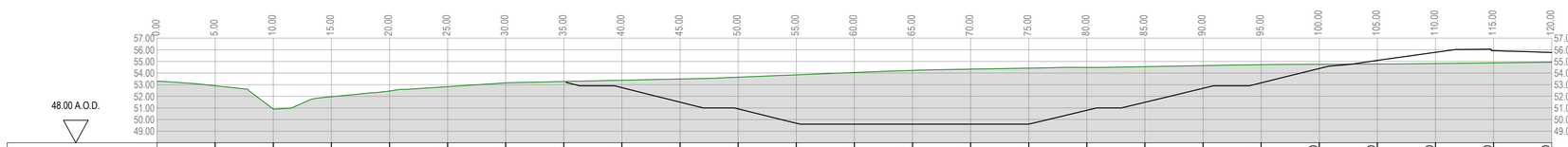
Client :
Legal & General
(Strategic Land North Horsham) Ltd

Project :
Mowbray (Land North of Horsham)

Title :
Junction Ref. C1: Left-in / Left-out
Private Drainage Layout

Project Engineer :	C. Salt	Scale :	As Shown @ A1
Project Director :	J. Birch	Date :	September 2023
Status :	CONSTRUCTION		

Drawing No. Mowbray-GLA-LILO-Ph2-D-C-1001 Rev C3



	Chainage	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	110.000	115.000	120.000
Existing Level		53.295	52.901	50.903	51.950	52.452	52.829	53.156	53.271	53.378	53.484	53.640	53.840	54.045	54.230	54.336	54.416	54.480	54.545	54.636	54.715	54.749	54.779	54.815	54.871	54.928
Finished Level									53.192	52.743	51.497	50.919	49.686	49.600	49.600	49.600	49.604	50.798	51.484	52.685	53.153	54.388	55.081	55.760	55.921	55.764

LILO ATTENUATION BASIN SECTION A-A

Horiz. 1:250 Vert. 1:250

NOTES

1. This drawing is to be read in conjunction with all relevant documents and specifications.
2. Dimensions are not to be scaled.
3. All works shall be in accordance with Volume 1 of Manual of Contract Documents for Highways Works - Specification for Highway Works (MCHW).
4. Contours are shown at 50mm intervals.

Source: MK Surveys drawing no. 31246 Sheets 6 & 7

KEY

— 25 Chainage marker

	Chainage	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	55.000	60.000	65.000	70.000	75.000	80.000	85.000	90.000	95.000	100.000	105.000	110.000	115.000	120.000
Existing Level		56.222	54.317	54.000	54.320	54.441	54.465	54.490	54.552	54.588	54.569	54.549	54.520	54.474	54.428	54.363	54.238	54.107	54.000	53.904	53.822	53.700	53.571	52.945	51.112	52.881
Finished Level		56.250	55.850	54.177	53.965	54.523	54.469	53.724	52.900	51.969	51.000	51.000	51.000	51.000	51.000	49.802	49.600	49.600	49.600	50.544	51.242	52.453	52.903	53.617		

LILO ATTENUATION BASIN SECTION B-B

Horiz. 1:250 Vert. 1:250

Rev.	Description	Date	Chkd
C3	Basin invert levels amended. Long sections revised to suit.	17/05/2024 D. Strange	CS

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Client :
Legal & General
(Strategic Land North Horsham) Limited

Project :
Mowbray (Land North of Horsham)

Title :
Junction Ref. C1: Left-in / Left-out
Attenuation Basin Long Sections

Project Engineer :	C. Salt	Scale :	As Shown @ A1
Project Director :	J. Birch	Date :	September 2023
Status :	CONSTRUCTION		

Glanville Job Number: 8220585

Drawing No. Mowbray-GLA-LILO-Ph2-D-C-1003 Rev C3

Appendix C

Photographic Record

Pond (north end, looking north-east towards sub-station) – 17th October 2024 (JD, Glanville)



Pond (north end, looking west) – 17th October 2024 (JD, Glanville)



Pond (from south-east corner, looking north-west) – 22nd October 2024 (JD, Glanville)



Outfall headwall from pond – 29th October 2024 (JD, Glanville)



Outfall headwall from pond – 5th November 2024 (JD, Glanville)



Pond (north end, looking north-west) – 16th January 2025 (GT, Glanville)



Outfall to Watercourse – 17th December 2024 (JD, Glanville)



Flow Control – 14th November 2024 (GT, Glanville)



Appendix D

As-Built Survey

519300E

519400E

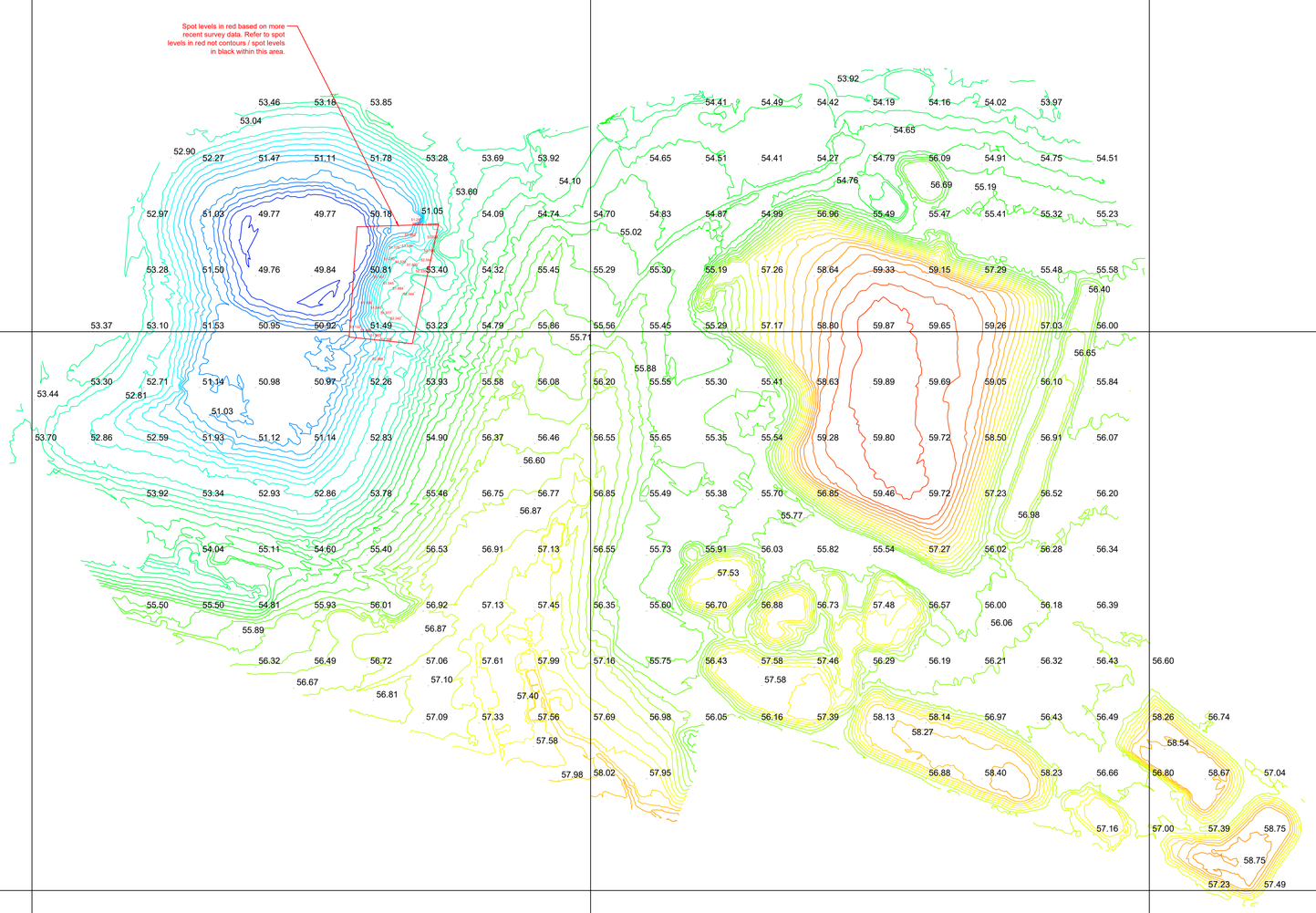
519500E

519600E

133500N

133400N

133300N



LEGEND

AOD ..... ABOVE ORDNANCE DATUM
BOLL .... BOLLARD
BH ..... BOREHOLE
BT ..... BRITISH TELECOMMUNICATIONS COVER
CATV .... CABLE TV COVER
DK ..... DROP KERB
EP ..... ELECTRICITY POLE
ERP ..... EARTH ROD POINT
FB ..... FLOWER BED
FH ..... FIRE HYDRANT
FP ..... FLAG POLE
GP ..... GATE POST
G ..... GULLY
GV ..... GAS VALVE
IC ..... INSPECTION COVER
LB ..... LETTER BOX
MH ..... MANHOLE
OG ..... OPEN GULLY
OSBM .. O.S.BENCHMARK
RE ..... RODDING EYE
RS ..... ROAD SIGN
RG ..... ROAD GULLEY
SP ..... SIGN POST
STN .... SURVEY STATION
SV ..... STOP VALVE
TAP .... WATER TAP/STANDPIPE
TBM .... TEMPORARY BENCH MARK
TJB ..... TELEPHONE JUNCTION BOX
TCB ..... TELEPHONE CALL BOX
TL ..... TRAFFIC LIGHT
TP ..... TELEPHONE POLE
WM ..... WATER METER
WSC .... WATER STOP VALVE
TREE .... GIRTH DIAMETER
SPREAD DIAMETER
HEIGHT

WALLS AND SURFACES

BR ..... BRICK
CONC ... CONCRETE
CP ..... CONC PAVING
CZP ..... CRAZY PAVING
CONB ... CONCRETE BLOCK
RW ..... RETAINING WALL

FENCES

BW ..... BARBED WIRE
CB ..... CLOSE BOARD
CLK .... CHAIN LINK
CP ..... CHESNUT PALING
CW ..... CHICKEN WIRE
OB ..... OPEN BOARD
P&R .... POST & RAIL

N

Significant trees only surveyed (and above 0.3m girth)
Trees indicative only and if tree information is critical, the advice of an Arboriculture specialist should be sought.

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GEODIME
Chanctonbury House
Church Street
Storrington
West Sussex
Tel: 01903 741035

Project: North Horsham - Landbuild

Client: Les Searle Group Ltd

Title: Topographical Survey

Scale	Surveyed by	
1/500	SB	
Date: 14 Oct 2024	Drawing No.	Revision

GRID - OS VIA ACTIVE GPS NETWORK, DATUM - OS

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