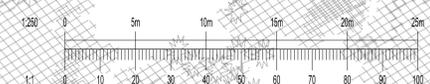


DRAINAGE PLAN (Scale 1:250)

DESIGN STAGE RIBA 4 OUTPUT
Further design coordination required pending topographical survey and the resultant landscape architect layout.



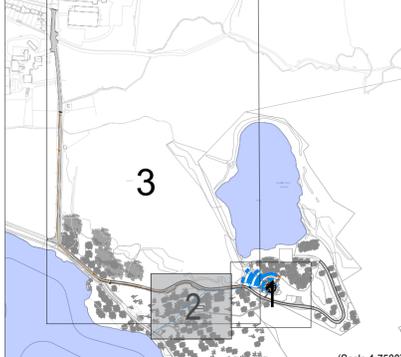
GENERAL NOTES:

- This drawing is to be read in conjunction with all relevant architects and engineers drawings and specifications.
- Do not scale this drawing, any ambiguities, omissions and errors on drawings shall be brought to the engineers attention immediately. All dimensions must be checked / verified on site.
- All dimensions are in metres unless noted otherwise.
- For general notes refer to drawing.

KEY:

- Surface water private drain
- Surface water flow control
- BD IL #
- Incoming backdrop IL
- Rainwater pipe
- Surface water private gully
- Surface water highway gully
- Filter drain (perforated pipe)
- Channel drain (with Access, and Sump box)
- Pervious pavement
- Below ground surface water storage tank
- Foul water private drain
- Foul water rising pump main
- Foul water pop-up
- Existing major (0.5m) and minor (0.1m) contours
- Proposed major (0.5m) and minor (0.1m) contours
- Existing Topographical information

SHEET LAYOUT



(Scale 1:7500)

Surface Water Drainage Philosophy - Outfall to Hodbarrow Lagoon

- Surface water drainage to drain via permeable paving and surface water gullies. The SW drainage routes to follow the road west out of the site before heading down the hill southwest to outfall into Hodbarrow Lagoon.
- Drainage to be limited to greenfield rates of existing combined catchments.
- Existing LDAR catchment area redirected to Hodbarrow Lagoon. 0.29ha
- Equivalent Qbar runoff rate from catchment: 2.2 l/s
- Proposed Impermeable area: 0.29ha
- Proposed greenfield 1:1yr restricted runoff rate is 1.8 l/s, and design storm 1:100yr the greenfield runoff be 5.4 l/s.
- Attenuation Volume required: 150m³ cellular attenuation tank to accommodate volume for all storms up to and including the 1:100 yr + 35% climate change located under car park.
- Emergency storage required for fire tender use, min 45m³. Storage located within attenuation tank, but below attenuation storage volume.
- A combination of permeable paving, gravel filled filter trenches, silt trap/catchpit chambers, and Downstream Defender provides water quality improvement.

Proposed Foul Drainage Philosophy

- Foul to drain to pumping station on north east side of site.
- Foul drainage to then be pumped circa 1km into neighbouring town's (Millom) public sewer assets.
- Foul Loading - TBC
British Water Foul Flows and Loads - Code of Practice
Canteen 58 covers - 10 l/s
Staff 10 works - 50 l/s
Visitor Toilets - 150 visitors - 10 l/s
Total flow - 2,870 l/d
Over 9h opening time
= 2,870 / (9 x 3,600) = 0.01 l/s

Design Notes:

- Below ground pipes Ø to be 100mm for Surface water, and 150mm for foul UNO.
- Invert levels are for chamber outfall pipes, UNO.
- Placement of lids/covers/frames to suit paving patterns where possible and to be wholly within one surface pavement type where possible - to landscape architects specification.
- Final placement of internal foul pop-ups to be confirmed.
- 24hr Emergency pump storage based on foul loading total flow.
- Information require from others to develop design:
18. Pumping station, pressure break/air admittance/flush out chambers and rising main to be designed by specialist.
19. Hodbarrow Lagoon outfall bank levels and W.L. range to be confirmed. (Assumed submerged discharge to reduce localised erosion at outfall.)
20. SW Flow rate/attenuation subject to LLFA confirmation currently greenfield 1:1-year and 150m³.
21. Impact of Redhills Quarry cliff slope stability exclusion zone. Design analysis to effect final layout of car park northern edge TBC

Rev.	Description:	Date:	By:	Chkd:
P07	DRAWING (SERIES) UPDATED TO: PROJECT NAMING CONVENTION LATEST POP LOCATIONS, SUBMERGED OUTFALL LATEST LA LAYOUT, DRAINAGE CATCHMENTS, NOTES TO MATCH CATCHMENT SIZE CHANGES	26/02/26	CC	GW
P06	RIBA 4 - SW DRAINAGE CATCHMENT AND OUTFALL REDESIGN TO HODBARROW LAGOON AND SHEET SIZE LAYOUT ALTERATION	04/11/25	CC	GW
P05	RIBA 4 FLOW CONTROL DESIGN UPDATED TO REVISED CATCHMENT VALUES	21/10/25	CC	GW
P04	RIBA 4 REBAGGE ISSUE - DESIGN STAGE NOTE ADDED	21/08/25	CC	AMB
P03	SW PIPE RUN DOWNSTREAM OF SW09 MOVED TO GRASS VERGE	20/08/25	CC	GW
P02	REVISED SCHEME FOR PLANNING	08/04/25	CC	GW
P01	INITIAL ISSUE	15/05/23	CLN	GW

Curtins

Units 24-25 Riverside Place K Village Lound Road Kendal LA9 7FH
01539 724 823
kendal@curtins.com
www.curtins.com

Civils & Structures - Transport Planning - Environmental - Infrastructure - Geotechnical - Conservation & Heritage - Principal Designer
Birmingham - Bristol - Cambridge - Cardiff - Douglas - Dublin - Edinburgh - Glasgow - Kendal - Leeds - Liverpool - London - Manchester - Nottingham

SUITABLE FOR INFORMATION **S2**



MILLOM - IRON LINE

DRAINAGE STRATEGY
SHEET 2

Drawn By	CC	Designed By	CC	Checked By	GW
Date	081617	Date	04/04/25	Scales	@ A1 1:250

Project No - Originator - Function - Spatial - Form - Discipline - Number
MIL-CUR-00-00-DR-C-5202 P07

M:\s1\Projects\B01617 Millom Iron Line\QA-Production\A4-Models\Drawings\CModel