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Berewood

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client **grainger plc** Investing in homes since 1912

project

BEREWOOD, WATERLOOVILLE
PHASE 8. CONSTRUCTION ACCESS

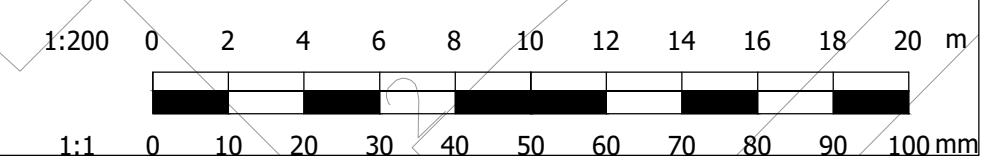
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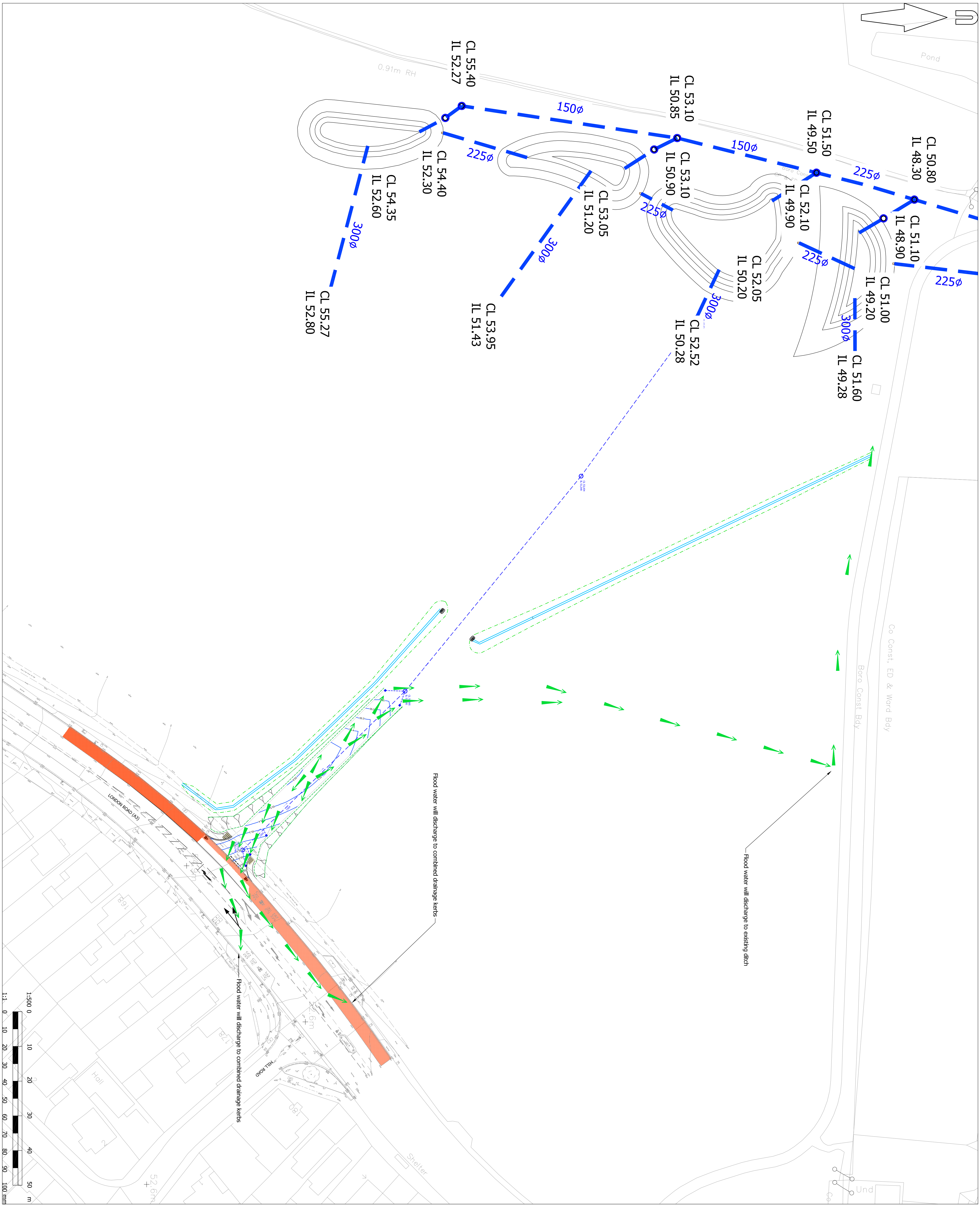
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title

RE-INSTATEMENT DRAWING

drawing number	rev.
GTWVILLE_P8/GA/02	





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KEY
DIRECTION OF FLOOD FLOW WATER

NOTES

1. THE DRAWING DEMONSTRATES THE FLOOD FLOW PATHS IN THE EVENT OF AN EXCHANGE EVENT SUCH AS A BLOCKED PIPED.

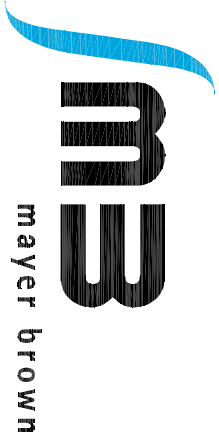


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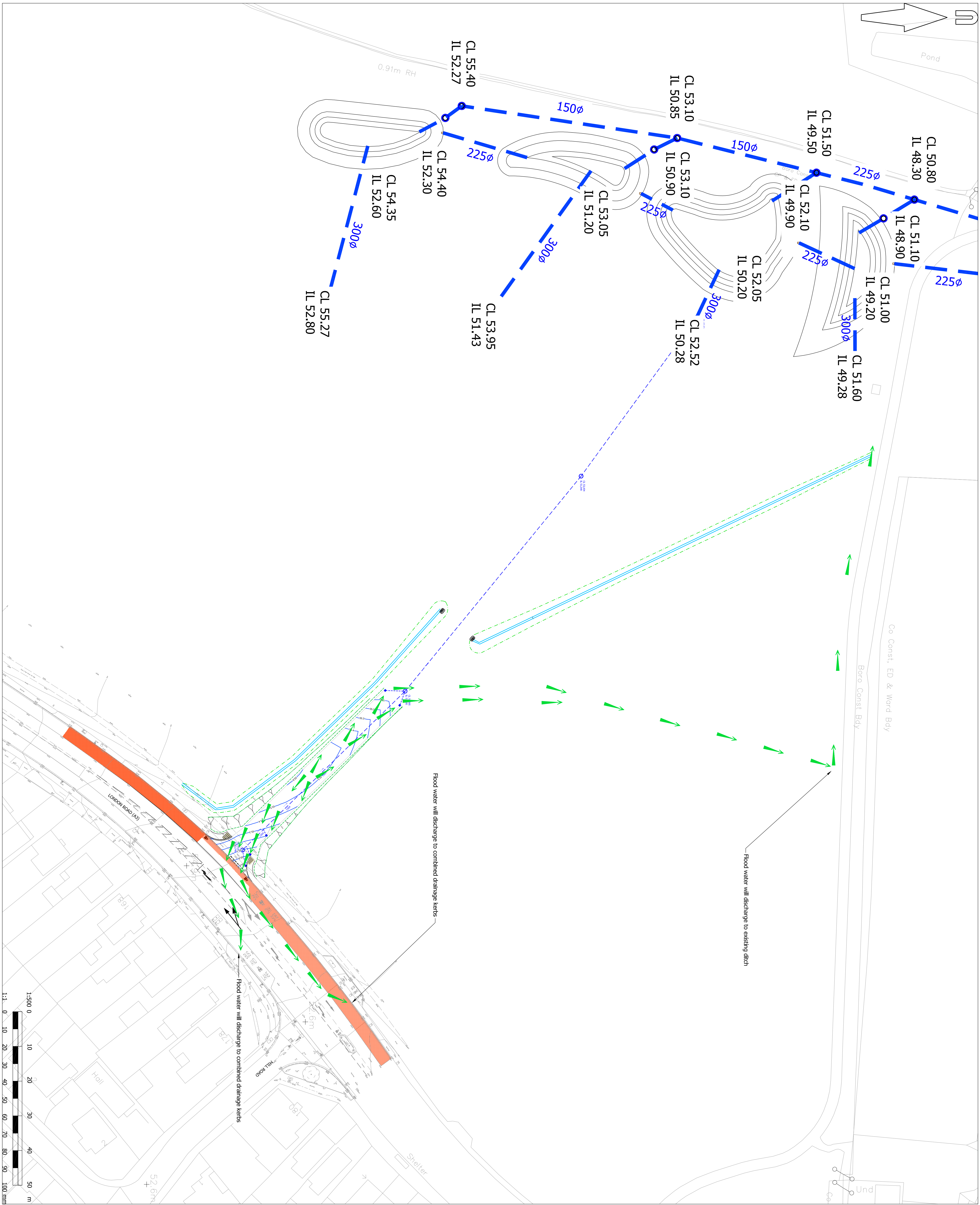
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BEREWOOD, WATERLOOVILLE
PHASE 8, CONSTRUCTION ACCESS

scale 1:500	drawn by AM	checked by RHA
date JUNE 2019	cad file DR_03.dwg	
title		

FLOOD FLOW PATHS

drawing number	rev.
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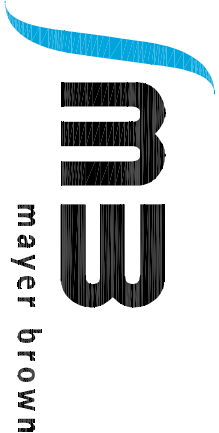


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title	scale	date	drawn by	checked by	

FLOOD FLOW PATHS

drawing number	rev.
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Introduction

This document sets out the planned maintenance requirements for the (non-highways) Sustainable Drainage System (SuDS) to be publicly maintained on Phases 3B and 8 of the Berewood Development. This plan should be reviewed and updated periodically by the adopting authority as additional experience is gained. The SuDS consist of open space features, distribution pipework and swales.

This SuDS maintenance plan shall also be read in conjunction with the Phases 3B and 8 Infrastructure Landscape design package, which is to be completed at a later date and approved under separate planning condition.

Schedule of Open Space SuDS Maintenance Requirements

SuDS Ref	Description	Inspect flow control(s)	Inspect Shut-Off Valve	Inspect Weirs	Inspect Gratings (Inlet>375Ø)	Inspect drain down feature (gravel trench & perforated- pipe)	Remove Litter & Leaf	Mowing	Landscape Maintenance	Monitor & removal of Silt	Inspect Downstream Defender
A	Pond	HydroBrake Optimum	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes (Surface Build-up)	Yes
B	Pond	HydroBrake Optimum	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes (Surface Build-up)	Yes
C	Pond	HydroBrake Optimum	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes (Surface Build-up)	Yes
D	Pond	HydroBrake Optimum	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes (Surface Build-up)	Yes
E	Pond	HydroBrake Optimum	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes (Surface Build-up)	Yes
F	Pond	HydroBrake Optimum	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes (Surface Build-up)	Yes
G	Pond	HydroBrake Optimum	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes (Surface Build-up)	Yes

Activity Breakdown

Flow Controls (HydroBrakes)

Frequency – 6 Monthly Inspections

Tasks

- Remove covers to chambers and enter where safe to do to. Staff to be appropriately trained and equipped for confined entry.
- Inspect visually for damage or corrosion.
- Check for and clear any obstructions. Wash down if required.
- Check correct operation of Bypass door and handle on HydroBrakes, grease lightly if required
- File Record of Visit and Actions Taken, report any defects for repair.

Shut-Off Valves

Sustainable Drainage Maintenance Plan

Frequency – 6 Monthly Inspections

Tasks

- Remove covers & attach operating tool
- Confirm valve was previously left in the open position
- Operate Valve to fully closed and reopen
- Repeat operation 3 times and leave in fully open position
- File Record of Visit and report any defect or stiff operation for repair.

Weirs (Kerb Gully Type)

Frequency – 6 monthly or where defects reported

Tasks

- Remove covers, remove any debris and rod through to junction
- File Record of Visit and report any defects for repair or blockage for jetting.

Weirs (Earth Type)

Frequency – 6 monthly or where defects reported

Tasks

- Check for excessive erosion or settlement lowering spill level
- Check for build up of vegetation or other obstructions
- File Record of Visit and report any defects for repair.

Rock Outlets

Frequency – 6 Monthly or where defects reported

Tasks

- Ensure that pipe and basket are covered by rocks as intended.
- Reposition or replace any rocks that have been removed.
- Check for and clear any debris or self sown vegetation caught between the rocks.
- File Record of Visit and report any defects for repair.

Landscape Maintenance

Frequency – As Specified in the Landscape Management Plan

- The Contractor shall regularly inspect and maintain SuDS features to ensure their effective operation as designed. Regular mowing in and around detention basins is required only along maintenance access routes, amenity areas (e.g. footpaths), across embankments and main storage area. The remaining areas can be managed as damp meadow grass, unless additional management is required for landscaping purposes.
- Management of vegetation and removal of nuisance plants.
- Remove sediment from inlets, outlet and fore bay. Tidy all dead growth before start of growing season.
- Repair erosion or other damage by re-seeding or re-turfing. Realignment of rip-rap, repair and rehabilitation of inlets, outlets and overflows, re-level uneven surfaces and reinstate design levels as required.

Silt Monitoring & Removal

Frequency – Monitor Annually, Remove as required (Assumed 5 yearly)

Tasks

- Take measurements and record depths of silt annually in pool areas of SuDS
- Arrange Removal of Silts in deep pools, where average depth is approximately 100mm, and a maximum not exceeding 300mm. Before de-silting a particular pond it should be trapped and netted out for amphibians and macro-invertebrates which should be transferred to a nearby pond assuming no fish are present. Not all ponds are to be de-silted in the
- Remove silts in dry basins where it threatens to restrict the capacity of inlets or outlets or is unsightly.
- NOTE - Sediments excavated from detention basins that receive runoff from residential or standard road and roof areas are generally not toxic or hazardous material and can therefore be safely disposed of by either land application or land filling. However, consultation should take place with the environmental regulator to confirm appropriate protocols. Sediment testing may be required before sediment excavation to determine its classification and appropriate disposal methods. In the majority of cases it will be acceptable to distribute the sediment on site if there is an appropriate safe and acceptable location to do so.

Vortex separators

Sustainable Drainage Maintenance Plan

Frequency – 6 monthly

Tasks

- Remove covers and inspect from the surface- **DO NOT ENTER CHAMBER**
- Floatable debris can be removed with a net
- Measure and record the depth of sediment and oil. The first few visits will determine future emptying intervals
- Remove oils and sediment using a vacuum tanker where necessary.
- File Record of Visit and report any defects for repair.

SuDS Ancillaries

In Addition to the open space SuDS and associated maintenance activities as listed above, there are a number of other items requiring periodic inspection and maintenance as follows:

Pipes

Frequency –Annual visit initially, then adjust as necessary

Tasks

- CCTV survey and jetting of areas of sediment build-up, repeat after 1 year.
- Re-jet identified sedimentation areas on a cycle as determined
- CCTV survey on a 10 year cycle to identify blockages and structural defects.

Chambers

Frequency –Annual Surface Inspection, below ground inspection as above

Tasks

- Visual inspection of covers and frames to identify defects on an annual basis
- View internal chamber structure when CCTV surveys of pipework are carried out to identify structural defects or maintenance issues.

Signage

Frequency – 6 monthly

Tasks

Sustainable Drainage Maintenance Plan

- Check that pollution shut-off signage is intact.
- Clean sign face with soapy water
- Report any defects for repair

Fencing

Frequency – 6 monthly

Tasks

- Check that fencing is intact and secure, check for signs of corrosion / rot.
- Report any defects for repair or replacement