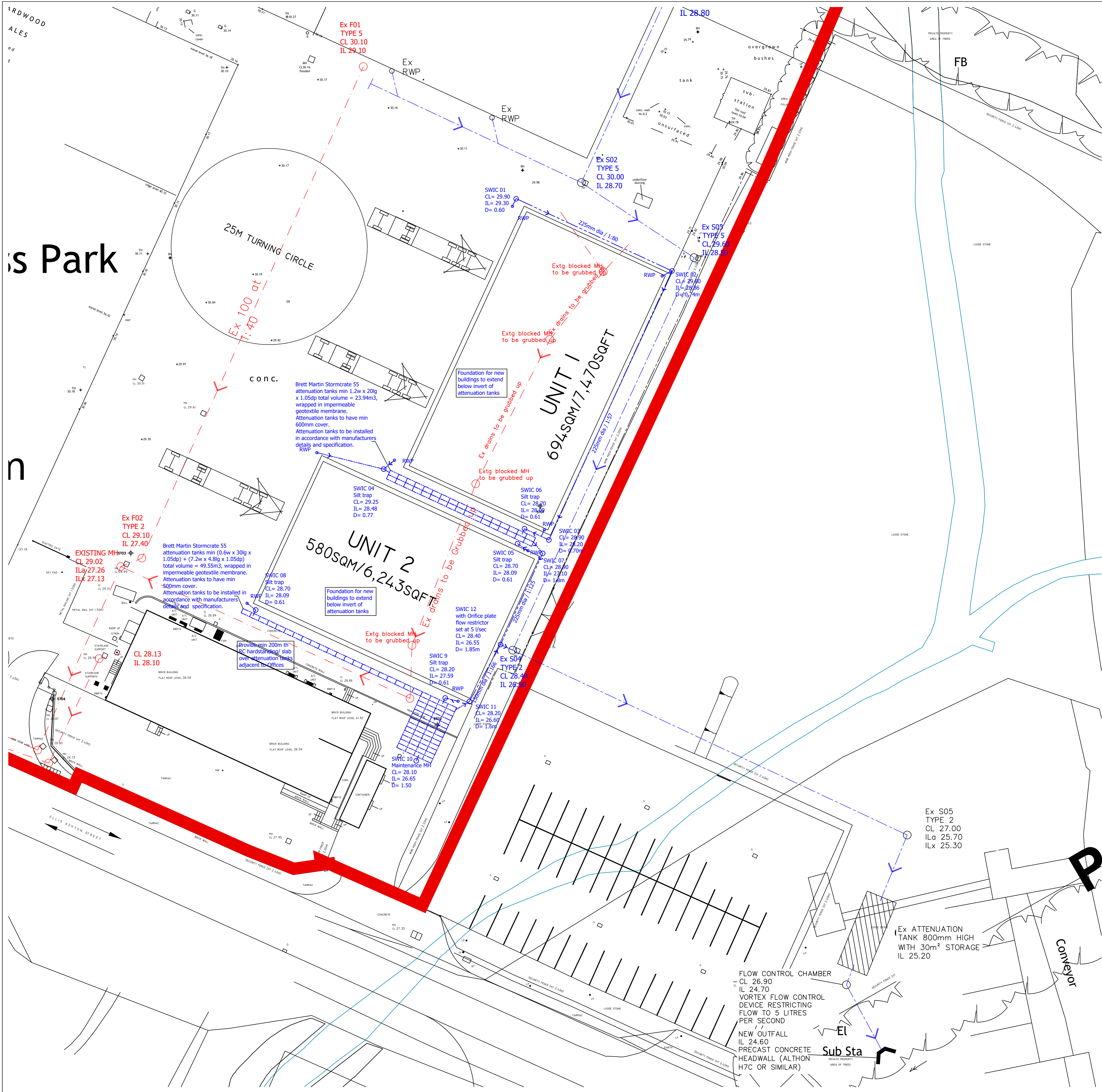




- Below Ground Drainage**
- All below ground drainage to be in accordance with Sewers For Adoption 7.
 - All proposed drainage levels shown on the drawings are taken from the levels provided on the Architects/Survey drawings and must be confirmed by the contractor on site prior to excavating trenches etc. All invert levels are to be the underside of any pipes, inspection chambers, manholes or tanks and it is the contractors responsibility to check these prior to commencing works. Any discrepancies are to be reported to STL Projects Ltd as soon as possible to allow for re-assessment where necessary.
 - All new below ground drainage is to be of min 100mm diameter, unless noted otherwise, plastic pipework to BSEN 13476 laid and bedded to manufacturer's instructions to sizes dependant upon loading conditions and gradients within their recommendations, to comply with BS 8301:1985 together with parts H1, 2 & 3 of the Building Regulations. Joining shall be either u.p.v.c pushfit couplings or by sealing rubber "o" rings in polyester mouldings.
 - Drains to be laid in suitable trench bedding classes for the specific application and accordance with all relevant British Standards and Building Regulations at the time of installation.
 - Where pipes run beneath solid floors, roads or are close to the surface then these should be encased in minimum 150mm concrete.
 - Where pipes run through walls then suitable precast concrete lintels are to be installed over the line of the pipe and the voids filled with gravel to prevent loading from the walls to the pipes.
 - No drainage pipes are to be laid beneath or within 45 degrees of the underside of a foundation. Where this occurs - foundations to extend down below invert.
 - Pipes are to be laid on a gradual fall as shown on the drawings to suit invert levels shown, although minimum falls of 1:40 for 100mm diameter foul sewers and 1:100 for 100mm diameter surface water pipes are used unless calculated otherwise.
 - Wherever possible, surface water should be discharged into suitable water storage units or directly into a soakaway positioned at least 5m from any structure.
 - Where drainage runs exceed 20m in length then intermediate rodding access/inspection chambers should be installed.
 - All new gullies should be back inlet gullies, BIG's, for rodding purposes. All new soil waste pipes should have roddable access covers.
 - All new manholes are to be of suitable design for the application and in accordance with all relevant British Standards and Building Regulations at the time of installation.
 - Proprietary plastic inspection chambers are required at a change in direction upto 1.0m deep, whilst masonry or precast concrete ring chambers are required below this depth. Brickwork manhole construction to be of 225mm class "B" engineering brickwork in 1:3 cement/mortar.
 - Brick or concrete ring manholes to be built up off minimum 150mm thick concrete base. Benching of concrete base to be formed around drainage channels to a smooth finish and fall to outlet.
 - Cast iron steps to BS1247:1975 shall be provided where depth of chamber exceeds 1000mm. All external MH covers shall be medium duty galv. steel to BS497 unless located within carriageways or car parks where heavy duty cast iron are to be used.
 - Manhole cover to be seated in rebated steel frames and sealed with grease on 100mm thick concrete frame base with 600x600mm min opening.
 - Any internal chambers shall be fitted with a double seal bolt down cover with an "inlay" recess for finishes and set in grouted frame.
 - Proprietary u.p.v.c inspection chambers to have 150mm min sulphate resisting conc base.

Drainage Maintenance and Management

Maintenance of the drainage will be undertaken by the Contractor transferred to a the owners of the property.

Documents to be prepared when following completion of the drainage system and proposed building works.

The management document will include the following

- All drainage on site to be maintained regularly with agreement written into the lease documents
- All costs associated with the maintenance of the drainage system to be borne by the owner.

The Drainage Maintenance Agreement to include and is not restricted to the following

- Cleaning and checking gullies and silt trap manholes within the site boundaries- 6 month intervals
- Inspecting soak-away and attenuation tanks and if required clearing silt from the tanks- 12 month intervals
- Defining responsibility for reporting defects or blockages and responsibility for arranging repairs accordingly
- Emergency procedures specified and set out to deal with spillages of hazardous liquids (petrol/ diesel/ turpentine etc).

Drainage Strategy

Proposed development comprises construction of two light industrial units on the south west of the site, the units are to have a separate foul and surface water drainage system connected to existing surface water and combined drainage systems on site.

- The foul drainage is to be connected to the combined drains between the offices and new units or into the combined drain to the east, within the main service yard.
- The BGS maps confirmed underlying bedrock comprising Pennine Middle Coal Measures formation - mudstone, siltstone and sandstone with overlying glacial till (boulder clay), Devensian - Diamicton, sedimentary superficial deposit.
- BRE 365 soakaways tests were undertaken for the previous development which confirmed impermeable clay subsoil therefore attenuation tanks were installed accordingly.
- The underlying superficial deposits are deemed to be impermeable and therefore not suitable for discharge to ground, therefore the proposal is to provide attenuation tanks for the new development.
- The attenuation tanks are to be designed for a 1 year, 30 year and 100 year storm with an increase in volume of 45% for climate change.
- The discharge from the new development is to be restricted to 5l/sec using an orifice plate or Hydro-brake flow restrictor.
- The surface water discharge from site is to connect into the existing surface water drainage system and flow into Logwood.

DRAINAGE KEY	
---	EXISTING FOUL SEWER
---	EXISTING SURFACE WATER SEWER
---	PROPOSED FOUL SEWER/ DRAINS
---	PROPOSED SURFACE WATER SEWER/ DRAINS
→	DIRECTION OF FLOW
□	SURFACE WATER MANHOLE
○	SURFACE WATER INSPECTION CHAMBER
□	FOUL WATER MANHOLE
○	FOUL WATER INSPECTION CHAMBER
○	SEALED RAIN WATER PIPE WITH BACK INLET GULLY
○	SEALED WASTE GULLY
○	SOIL WASTE & VENT PIPE
○	STUB STACK/ SOIL PIPE POP UP

The Copyright of this drawing belongs to STL Projects Ltd and shall not be used or reproduced in any form without its express permission. The moral right of the Author is hereby asserted - Copyright © 2000. Do not scale from this drawing - Work to figured dimensions only. All dimensions to be confirmed with Architect, where applicable, or checked on site prior to the execution of any work. For the avoidance of doubt all dimensions are measured to wall structure and not the finishes unless otherwise stated. Where any discrepancy is found to exist within or between drawings and/or documents it should be reported to the engineer immediately. STL Projects Ltd shall not be liable for any use of drawings & documents for any purpose other than for which the same were prepared by or on behalf of STL Projects Ltd. This drawing is to be read in conjunction with all other relevant information.



Details



Plans



Revisions:

Date	Revision Details
P3 28.7.25	Site plan updated

- ☐ ISSUED AS WORKING DRAWING
- ☐ CLIENT APPROVED
- ☐ PRELIMINARY

Client:
Hardwood Holdings Ltd

Project:
Ellis Ashton St, Huyton, Liverpool.

Title:

PROPOSED SURFACE WATER DRAINAGE LAYOUT AND DETAILS FOR NEW BUILDINGS

Drawn: RJ **Scale:** As shown @ A1

Checked by: MR **Date:** June 2025

Drawing No. 25-6488 DR01 **P3**