

SUPPLEMENTARY GUIDANCE NOTES RELATING TO DISPOSAL OF SURFACE WATER



Introduction

The purpose of this guidance note is to provide advice to applicants when completing the surface water drainage design for a new development, both for Greenfield and Brownfield sites. This does not affect foul drainage disposal which should be discussed with Severn Trent as early as possible to ensure additional flows can be accommodated without undue delay to the development.

Lead Local Flood Authority (LLFA) Consultation

Since April 2015, the LLFA have assumed the role of being a statutory consultee in the planning process for developments of 10 dwellings or more: or equivalent non-residential and/or mixed development. The LLFAs role is vital to ensure that surface water disposal on new development is adequately assessed so that the local planning authority can satisfy themselves that drainage proposals are satisfactory and to make sure, through the use of planning conditions or planning obligations, that there are clear arrangements in place for future maintenance of sustainable drainage systems (SuDS) over the lifetime of the development. This will also ensure surface water disposal aligns with local planning policies, flood risk strategies and national policies, such as the National Planning Policy Framework (NPPF).

It is strongly recommended that the LLFA are involved in early pre-application discussions when the development of a site is initially being considered. Pre-application discussions will help to ensure that SuDS are appropriately considered ahead of or as part of preliminary development layouts, and that they are fully integrated into the final development layout. Whilst Severn Trent are willing to advise on sewerage availability this does not negate the planning requirement relating to adequacy of SuDS on new development.

Council Guidance

Specific guidance has been published by each of the Councils, within the Severn Trent area, for the purpose of providing guidance to all persons involved in the design, construction, operation and future maintenance of all SuDS features within their jurisdiction.

The purpose of the council producing this guidance is to unite all stakeholders to embrace a new attitude to SuDS to respond to the pressures to the changing climate as well as the need to better understand area's ground conditions, greenfield, urbanised environment, and watercourses. Each Council's guidance has been published on their websites which we encourage developers to use as a resource before considering a surface water connection to the Severn Trent Water network.

Links to the council specific guidance can be found on the accompanying spreadsheet.

SuDS Hierarchy

Severn Trent is fully supportive of the fundamental SuDS principle that priority should be given to managing surface water as close to source as possible. In accordance with national standards and guidance a sequential series of checks should be undertaken to ensure the relevant SuDS features are being proposed whereby (in order of priority) rainwater re-use, infiltration to ground and controlled discharge to a water body are properly considered ahead of any controlled connection to a culverted watercourse/other drainage system or public surface water sewer.

A controlled connection to a public combined/foul sewer would only be considered under rare exceptional circumstances where all other options have been completely exhausted. Acceptance of surface water into a combined sewer is not only unsustainable because of the need to convey/treat rainwater but it also takes away existing capacity which could constrain the connection of foul flows on future development. It is also possible that connection of additional surface water flows will require capacity upgrades to the existing sewerage system which may delay development.

Severn Trent consider the CIRIA 'The SuDS Manual' (C753F) guidance to be the most comprehensive study that provides best practice guidance on how to ensure the effective delivery of surface water management. A free copy of the guidance can be downloaded from the CIRIA, here:

<https://www.ciria.org/ItemDetail?iProductCode=C753F&Category=FREEPUBS>

Connection to a Public Sewer

Whilst Severn Trent will be able to provide advice on potential public surface water sewer connection options, it is essential that a developer contacts the LLFA as early as possible to discuss surface water disposal as they will be able to provide guidance on surface water flood risk policy which may influence SuDS requirements. It is strongly recommended that LLFA discussions take place before contacting Severn Trent. Where the outcome of LLFA discussions concludes that a controlled discharge to the public sewerage system is the only viable option then Severn Trent would be pleased to discuss sewer connection options, satisfied that the LLFA have been consulted in line with their surface water management role and in their capacity as statutory consultee.

Evidence must be provided to demonstrate why the sequential SuDS checks have concluded that a connection to the public sewer is required. This must include a Site Investigation Report including percolation test data/graphs/calculations/results together with relevant correspondence with the LLFA.

Design Standards

Surface water disposal design should consider the interactions between the adoptable sewer design criteria based on a 30-year design storm (outlined in 'Design and Construction Guidance') and the "Non-statutory technical standards for SuDS" requirement to restrict discharge from a site up to and including the 1 in 100 year critical storm event plus an allowance for climate change as required by the LLFA.

For Greenfield development, the peak runoff rate should never exceed the peak pre-development run-off rates/volumes for the same rainfall event irrespective of the design storm duration consistent with the national non-statutory technical standards. For developments which were previously developed (Brownfield), the peak runoff rate must be as close as reasonably practicable to the greenfield runoff rate from the development for the same rainfall event but should never exceed the rate of discharge from the development prior to redevelopment again for the same rainfall event. This requirement to remove pre-development surface water discharges to the sewerage system will help remove capacity constraints and aid future development.

To establish the pre-development run-off rates a detailed existing drainage survey will be required indicating pipe locations including sizes and levels, impermeable area connectivity to each pipe and topographical information to support existing drainage assumptions. Photographs of the existing buildings and surface features should be provided and where necessary a CCTV sewer survey should be provided to support the drainage survey to demonstrate connectivity.

In line with 'Design and Construction Guidance', the drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30-year rainfall event. For higher storm return periods the drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur during a 1 in 100-year rainfall event in any part of: a building (including a basement); or in any utility plant susceptible to water (e.g. pumping station, electricity substation, water booster station) within the development.

Small Developments

Whilst developments of fewer than 10 dwellings (or their equivalent) are excluded from the post April 2015 planning requirements the underlying principles regarding sustainable surface water management are still valid. The collective impacts of surface water discharges from smaller developments can have an adverse impact on flood risk, especially in smaller rural catchments where smaller sewerage systems are more susceptible to increases in surface water inflow. On small developments infiltration to ground and peak flow attenuation must be considered to mitigate flood risk in the community but where a sewer connection is envisaged then the developer is recommended to discuss surface water disposal options with Severn Trent as early as possible.

Contact

For further assistance please contact our Network Solutions team via: network.solutions@severntrent.co.uk

Appendix L – Proposed Drainage Layout

Construction Hazards



Contractor to confirm invert levels of existing surface and foul water drainage prior to commencement of works.



Contractor to jet and resurvey pipe to confirm it is of a suitable condition for reuse.



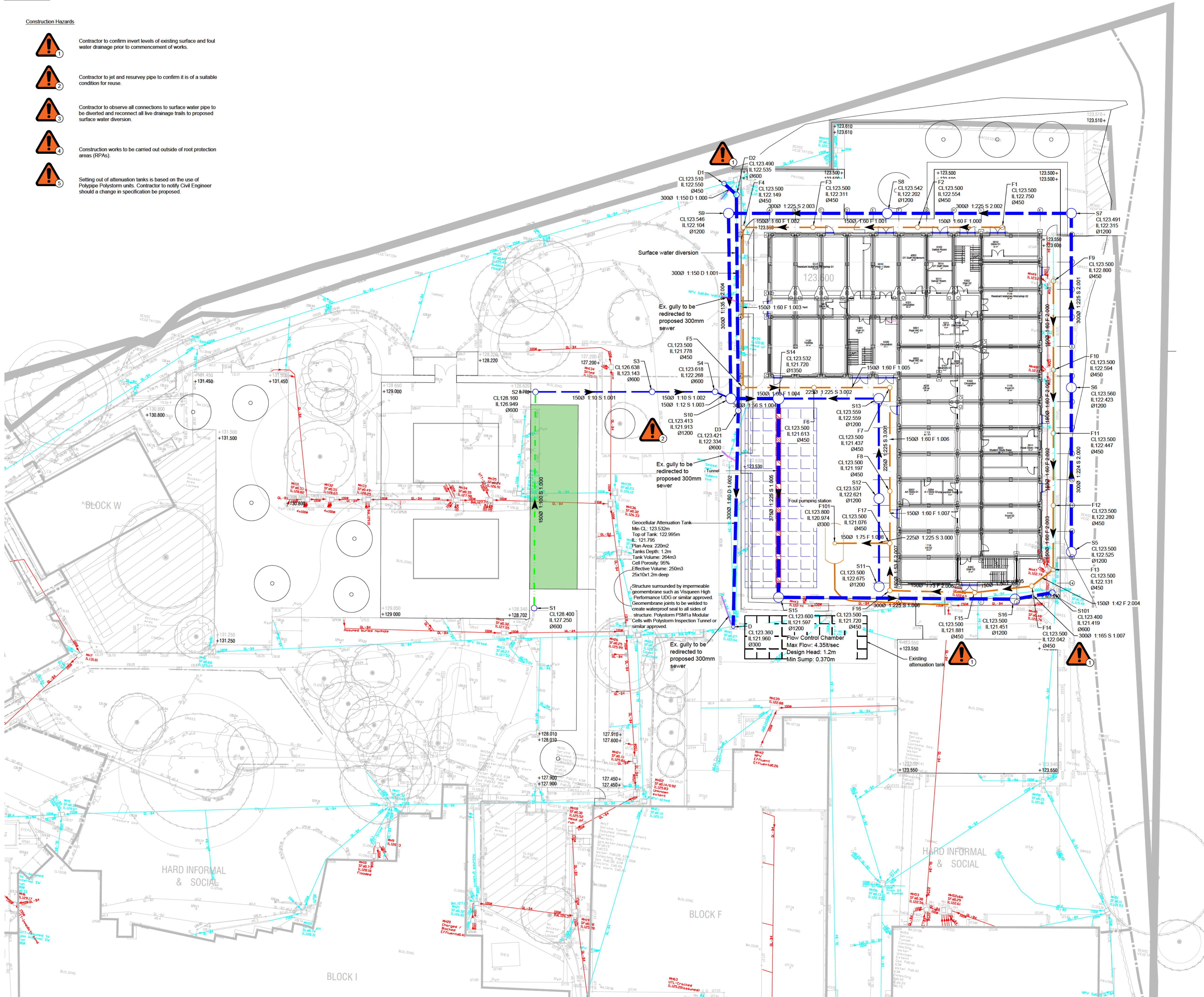
Contractor to observe all connections to surface water pipe to be diverted and reconnect all live drainage trails to proposed surface water diversion.



Construction works to be carried out outside of root protection areas (RPAs).



Setting out of attenuation tanks is based on the use of Polypipe Polystorm units. Contractor to notify Civil Engineer should a change in specification be proposed.



General Notes

- For setting out refer to Architect's drawings.
- This drawing to be read in conjunction with all other Architectural and Engineering drawings and all other relevant drawings and Specifications.
- Do not scale from this drawing. Use figured dimensions only.
- Hard copies and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf, rvt, etc.) are an uncontrolled issue and any work carried out based on these files is at the recipient's risk. Design ID will not accept any responsibility for any errors arising from the use of these files, either by human error by the recipient, use of un-dimensioned measurements, software compatibility issues and any errors arising when these files are used by the recipient for drawing production or setting out on site.
- Contractor shall check and verify all dimensions and levels on site before commencing work and report any discrepancies to this office for amendment.
- This drawing/document must be read in conjunction with the Design ID project specification. If not received the Contractor must request this from this office before commencing.
- CE Marking.
- All structural components to be CE Marked in accordance EN 1090 Pts 1 and 2.
- Building Execution Class: EXC1 EXC2 EXC3 EXC4
- Any steel fabricator used must be a member of the BCSCA or demonstrate they are CE Marked by another approved notified body.
- Construction (Design and Management) Regulations 2015 / Construction (Design and Management) Regulations (NI) 2016 (CDM). Client's Duties
- CDM Regulations aim to improve health and safety in the industry by helping to:
 - Sensibly plan the work so the risks involved are managed from start to finish
 - Have the right people for the right job at the right time
 - Cooperate and coordinate work between clients, designers and contractors
 - Have the right information about the risks and how they are being managed
 - Communicate this information effectively to those who need to know
- Consult and engage with workers about the risks and how they are being managed
- To comply with the CDM Regulations the Client must be aware of and undertake all their duties set out in Part 2 of the Regulations. These include, but are not limited to, making arrangements for welfare facilities, appointing a Principal Designer and appointing a Principal Contractor. A free copy of the HSE's Guidance on the Regulations can be downloaded from the HSE website (<https://www.hse.co.uk/pubs/priced/H53.pdf>). The Regulations can be downloaded from the UK Legislation website (www.legislation.gov.uk)

Specific Notes & Specification

- For All Project Specific Notes refer to Document No. #####-DID-ZX-XX-SP-S-000#

Legend

- Proposed Foul Water Gravity System
- Proposed Surface Water System
- Proposed Filter Drain
- Proposed Perforated Pipe
- Existing Surface Water Drainage
- Existing Gullies to be Redirected
- Existing Foul Water Drainage
- Proposed Linear Drain
- RWP, FG, DP
- Proposed Rain Water Pipe, Floor Gully, Drain Point (foul)
- Proposed Access Chamber
- Proposed Geocellular Attenuation
- Inspection Tunnel
- Rain Garden

P03	10.03.23	MM	DF	Surface & Foul Water Updated
P02	20.01.23	MM	DF	Drainage Updated
P01	23.11.22	MM	DF	Draft CP Issue
Rev	Date	Drawn By	Appr. By	Description

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Project
Hinckley Academy,
Leicestershire

Drawn By
CB

Design ID Project No.
22229

Drawing Title
Drainage Layout

Date Drawn
Nov'22

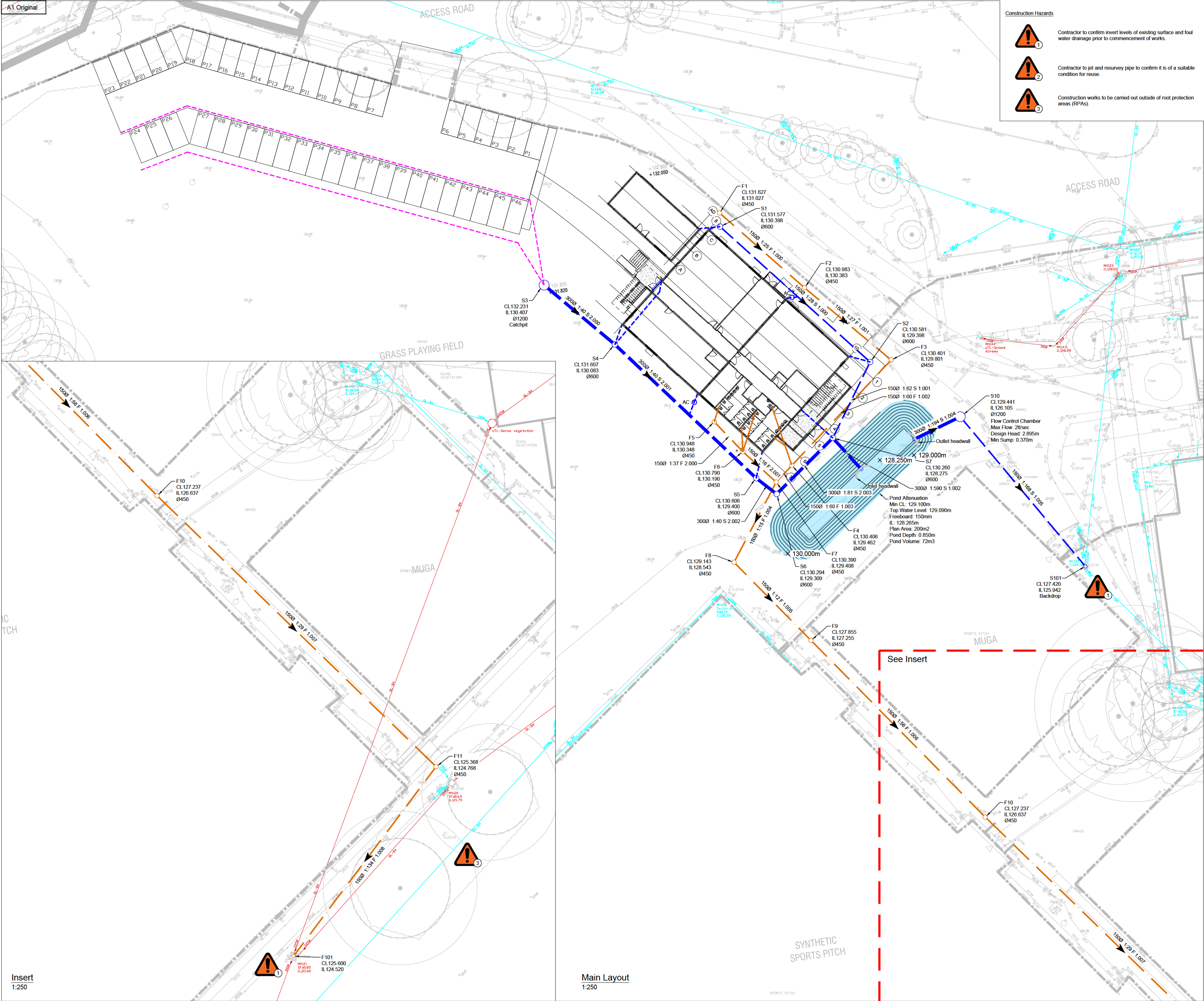
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Full Document Reference
SPL0001-DID-XX-XX-D-C-5011

Suitability & Description
S4 - For Approval

Project	Originator	Volume	Level	Type	Role	Number	Revision
SPL0001-	DID	-	XX	-	C	-	5011

Revision
P03



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Specific Notes & Specification

- The layout is based on the following information:
 - Architectural Ground Floor GA from HLM Architects, Model Ref. '2133-R10-XX-00-DR-W-0000', dated 23.02.2023.
 - Landscape Site Plan, Drawing Ref. '2133-R10-XX-00-DR-W-0000' dated 14.02.2023.
 - Topographical survey, Drawing Ref. 'SPL0001-TTL-XX-XX-M-O-0001', dated 28.09.2022.
- Existing utilities locations based on Tetra Techs Survey, Drawing Ref. '784-B026224', dated 04.06.2021. The exact location of existing utilities shall be determined by CCTV and GPR surveys and the contractor. Any redundant manholes to be broken out and backfilled with granular material. Redundant pipes to be filled with 10:1 p/a/cement mix or broken out.
- Underslab foul water drainage from high level to be 100mm diameter and installed at a gradient of 1:40 unless stated otherwise. Refer to MEP Engineer/Architect drawings for pop-up set out locations.
- Refer to architectural drawings for floor gully discharge points and linear drain details. All gullies and channel outlets are to be with trapped version.
- The contractor shall check the depth, position and invert levels of all existing drainage, at the proposed connection points and report any discrepancies to the engineer.
- Foul water drain points and rain water pipes to have above ground access panels.
- Grease trap/dosing system has not been included as part of the underslab drainage design. Above slab system to be specified by others if required.
- SuDS maintenance regime to be implemented in accordance with the recommendations in 'The SuDS Manual' (CIRIA C753) and manufacturers instructions.
- The length of pipework between manholes to include for any short length pipes as necessary to achieve the configuration of rocker pipes and standard short length pipes at fixed manholes positions.
- All pipework built into manholes to be either standard short lengths or cut lengths as appropriate. Rocker pipes to be a maximum of 600mm long. All 'Y' connections to be formed utilising proprietary junction sections.
- All surface water manhole covers in trafficked areas to be non-rocking type, single sealed, locking and load class D400. All surface water manhole covers in non-trafficked areas to be non-rocking type, single sealed, locking and load class B125.
- All foul water manhole covers in trafficked areas to be non-rocking type, double sealed, locking and load class D400. All foul water manhole covers in non-trafficked areas to be non-rocking type, double sealed, locking and load class B125.
- All foul and surface water drains up to and including 255mm diameter to be uPVC. All pipes 300mm diameter and above to be concrete class M. Alternative material can be used subject to approval.
- All external gully connections and channel drain gully connections to be 150mm dia unless stated otherwise. All gully and channel drain outlets to be trapped and roddable.
- Adoptable manholes within paving areas to have solid top cover. Private manholes within paving areas to have recessed covers.
- All drainage works to be in accordance with the Civil Engineering Specification for the Water Industry (CESWI), Sewer Sector Guidance Appendix C - Design and Construction Guidance. Approved Document H (2015 edition), Building Regulations 2010 and the details provided on the contract drawings.
- Roof is drained by gravity system unless noted otherwise.
- Green roof is included but has no capacity to act as a blue roof.
- Concrete covers to all shallow pipes. See drainage details.
- Ex. Sewers under building to be adopted.
- All pipework laid in landscaped areas with cover less than 0.6m to have Class X bedding.
- All pipework laid in hard standing areas with cover less than 0.9m to have Class X bedding.
- All other pipework to have Class S bedding.

Legend

- Foul Water Gravity System
- Surface Water System
- Filter Drain
- Existing Surface Water Drainage
- Existing Foul Water Drainage
- Linear Drain
- RWP, FG, DP Rain Water Pipe, Floor Gully, Drain Point (foul)
- Access Chamber
- Pond

Rev	Date	Drawn By	Appr. By	Description
P01	28.02.23	MM	DF	Draft CP Issue

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Project
Hinckley Academy,
Leicestershire

Drawn By
MM

Design ID Project No.
22229

Drawing Title
Temporary Building
Drainage Layout

Date Drawn
Feb 23

Scale(s) @ A1
1:200

Full Document Reference
SPL0001-DID-XX-XX-D-C-5012

Suitability & Description
S4 - For Approval

Project	Originator	Volume	Level	Type	Role	Number	Revision
SPL0001-	DID	-	XX	-	D	-	C - 5012
P01							

Appendix M – Maintenance Confirmation for Hinckley Academy



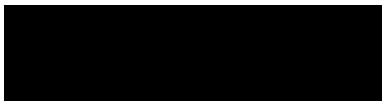
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09 March 2023

Dear Reds10 (UK) Limited,

Please accept this letter as confirmation that 'The Hinckley School' will be responsible for maintaining the on-site drainage and this will form part of our ongoing site management and maintenance programme. The school budget will include an annual allowance to cover site maintenance works and any drainage maintenance requirements will be factored into this, as with all our schools. Upon practical completion we will work with our facilities management team to ensure site maintenance is in accordance with the buildings operations manuals and appropriate legislation.

Kind Regards



Nr Nigel Broom

The Futures Trust