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PRELIMINARY
SUBJECT TO DETAILED DESIGN

This drawing illustrates a sketch proposal only and as such is subject to detailed site investigation including ground conditions/contaminants, drainage, design and planning/density negotiations. The layout may be based upon an enlargement of an OS sheet or other small scale plans and its accuracy will need to be verified by Survey. Full risk analysis under the CDM Regulations has not been undertaken.

KEY

- Surface water drainage 
- Surface water headwall 
- Infrastructure areas 
- 6m watercourse easement 
- Western catchment 
- Eastern catchment 

Impermeable areas are to be split into two catchments, the western catchment and eastern catchment.

Catchment details		
	Western	Eastern
impermeable area	7468 m ²	2312 m ²
greenfield runoff rate	2.4 l/s	0.7 l/s
attenuation required	825 m ³	256 m ³

Surface water attenuation can be provided within lined 400mm deep gravel bases with 30% void ratio, to be laid at a gradient of 1/500. It is expected the gravel bases can be lifted at the lower edge from existing ground levels to enable outfalls to be located at a higher level than the receiving on-site watercourse (which itself is to be deepened).

Surface water flows from each catchment are to be discharged at the 1 in 1 year greenfield runoff rate via a suitable flow control device. For indicative purposes, a hydrologic flow control device has been used. Additional design elements, such as outflow control, is to be confirmed in detailed drainage design.

E	Updated Layout	LS	FC	11.04.24
D	Added references to penstocks	AM	FC	22.03.24
C	Updated to latest layout	AM	FC	04.01.24
B	Updated to client comment	AM	FC	18.12.23
A	Updated with additional topo information	AM	FC	13.12.23
Rev	Description	By	Ckd	Date



A TETRA TECH COMPANY
20 Farringdon Street, London, EC4A 4AB
T: +44 20 3691 0500 E: rps@hydrologyservices@rpsgroup.com

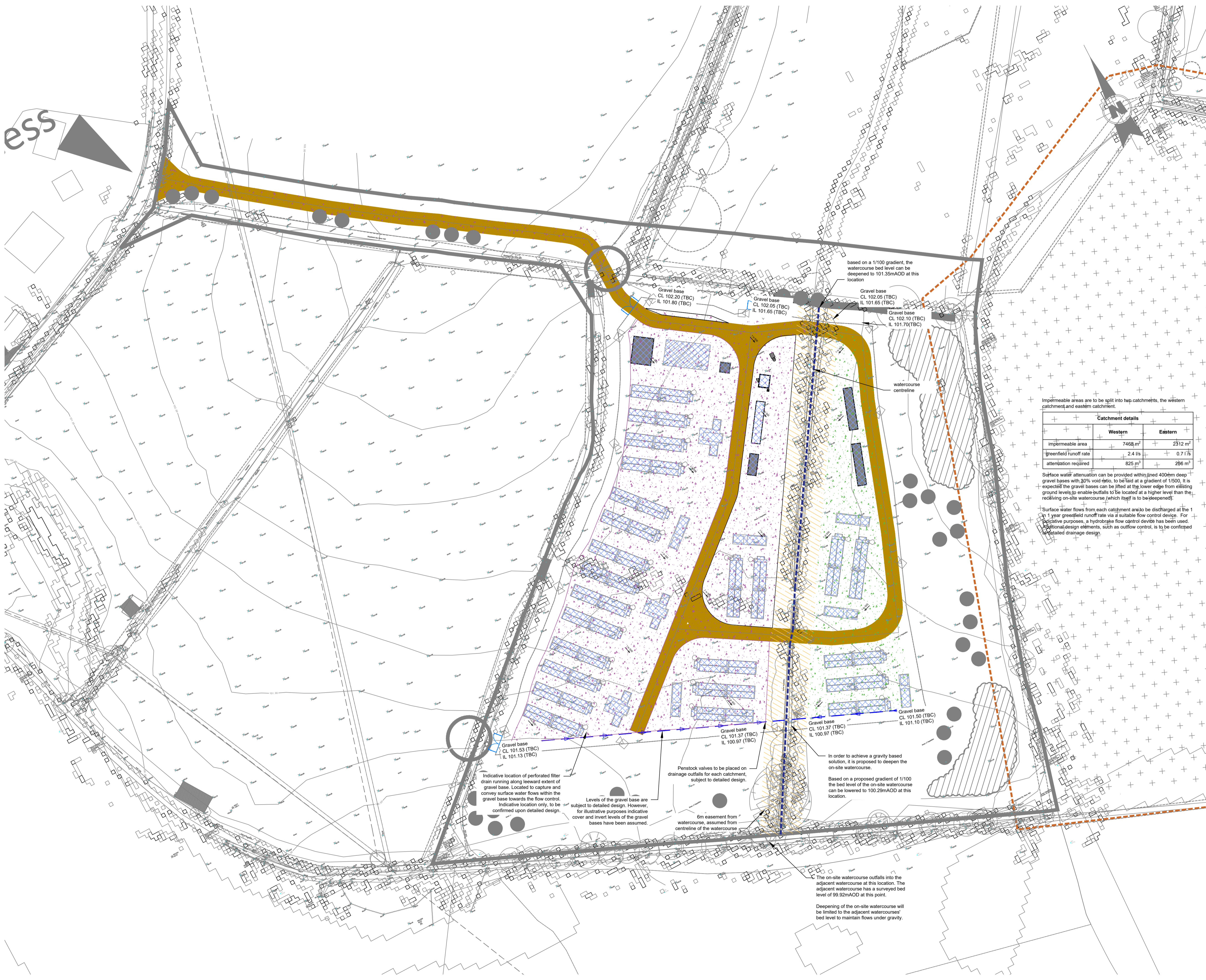
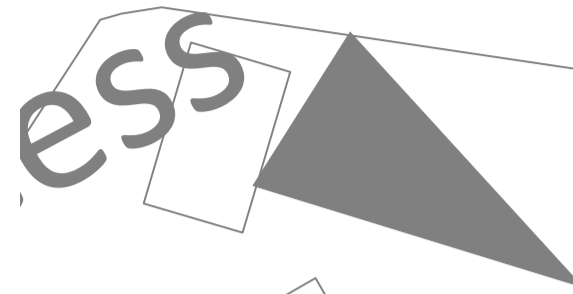
Client **Lightsource BP**

Project **Pentir Energy Storage System**

Title **Conceptual Drainage Strategy**

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draft	1:500 @A1	20.11.23
Task Team Manager	Information Author	Task Information Manager
FC	AM	FC
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DR01		

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HLEF03937	E
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based on a 1/100 gradient, the watercourse bed level can be deepened to 101.35m AOD at this location

Gravel base
CL 102.20 (TBC)
IL 101.80 (TBC)

Gravel base
CL 102.05 (TBC)
IL 101.65 (TBC)

Gravel base
CL 102.05 (TBC)
IL 101.65 (TBC)

Gravel base
CL 102.10 (TBC)
IL 101.70 (TBC)

watercourse centreline

Gravel base
CL 101.53 (TBC)
IL 101.13 (TBC)

Gravel base
CL 101.37 (TBC)
IL 100.97 (TBC)

Gravel base
CL 101.37 (TBC)
IL 100.97 (TBC)

Gravel base
CL 101.50 (TBC)
IL 101.10 (TBC)

Indicative location of perforated filter drain running along leeward extent of gravel base. Located to capture and convey surface water flows within the gravel base towards the flow control. Indicative location only, to be confirmed upon detailed design.

Levels of the gravel base are subject to detailed design. However, for illustrative purposes indicative cover and invert levels of the gravel bases have been assumed.

Penstock valves to be placed on drainage outfalls for each catchment, subject to detailed design.

In order to achieve a gravity based solution, it is proposed to deepen the on-site watercourse.

Based on a proposed gradient of 1/100 the bed level of the on-site watercourse can be lowered to 100.29m AOD at this location.

6m easement from watercourse, assumed from centreline of the watercourse

The on-site watercourse outfalls into the adjacent watercourse at this location. The adjacent watercourse has a surveyed bed level of 99.92m AOD at this point.

Deepening of the on-site watercourse will be limited to the adjacent watercourse's bed level to maintain flows under gravity.