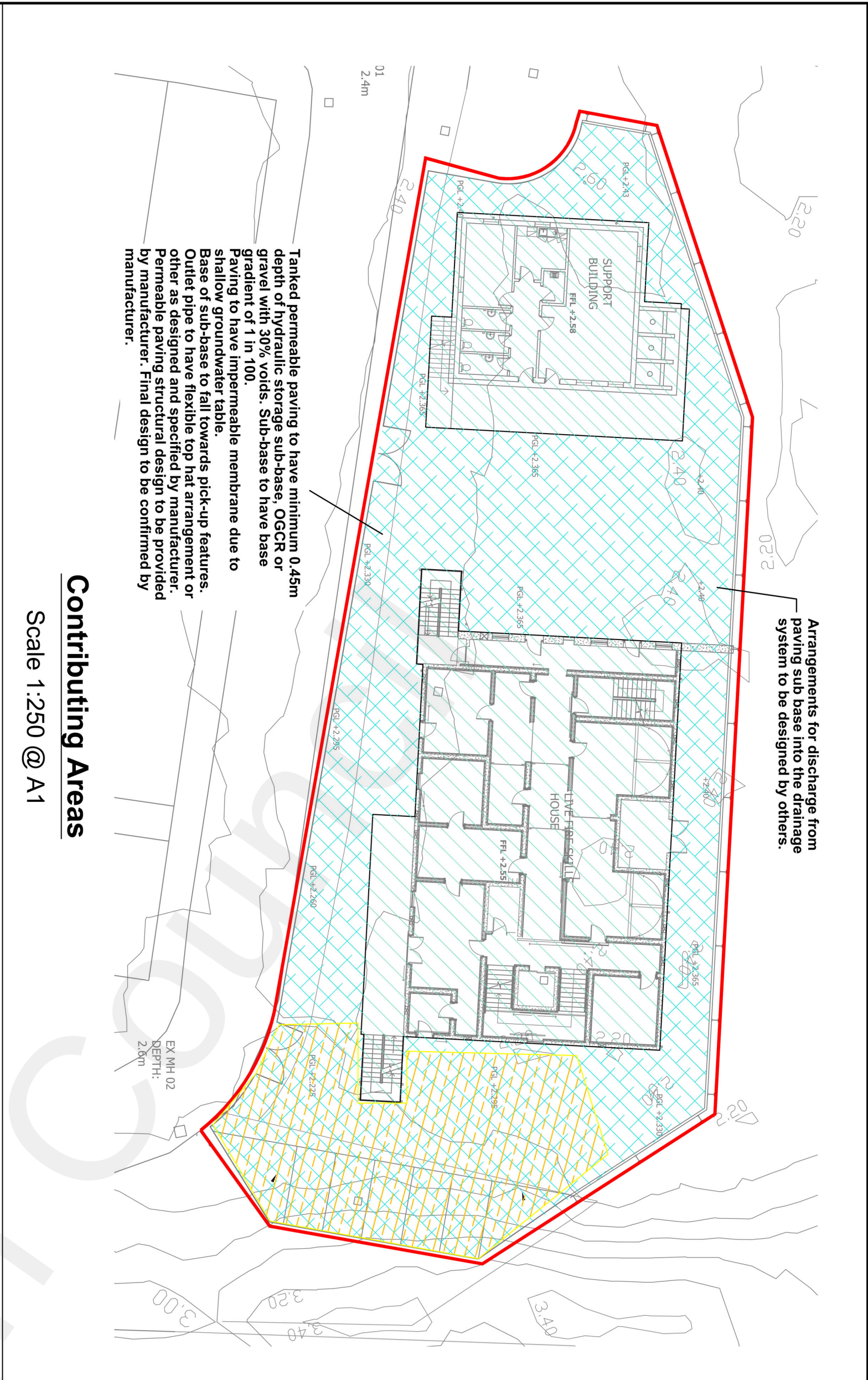




Contributing Areas
Scale 1:250 @ A1

- Key:**
- Permeable paving (Type C non infiltrating) (624m²)
 - Building roof (604m²)

Pollution hazard indices (Table 26.2 SUDS Manual)				
Land Use	Pollution hazard level	Total suspended solids	Metals	Hydrocarbons
Non residential roofs	Low	0.3	0.2	0.05
Individual property driveways, residential car parks, low traffic roads	Low	0.5	0.4	0.4

Indicative SUDS mitigation indices (Table 26.4 SUDS Manual)			
SUDS component	Total suspended solids	Metals	Hydrocarbons
Permeable paving	0.7	0.6	0.7
Total	0.7	0.6	0.7

- Drainage Strategy:**
- Design based on strategy supplied by Adkins.
 - Drainage strategy consists of permeable paving and an attenuation tank with controlled discharge to an existing surface water manhole which then discharges via an existing connection into the nearby watercourse.
 - Permeable paving will discharge via perforated pick up drains or top hat type outlets. Base of storage sub-base to fall towards pick up / discharge points, all as manufacturer's design.
 - Surface water will discharge to watercourse via existing outfall connected to the existing MH 02 manhole, subject to agreement by sewer/water authority and third party landowners.
 - Discharge rate will be controlled by hydrobrake to 2 l/s, subject to approval.

Tanked permeable paving to have minimum 0.45m depth of hydraulic storage sub-base, OCCR or gravel with 30% voids. Sub-base to have base gradient of 1 in 100.

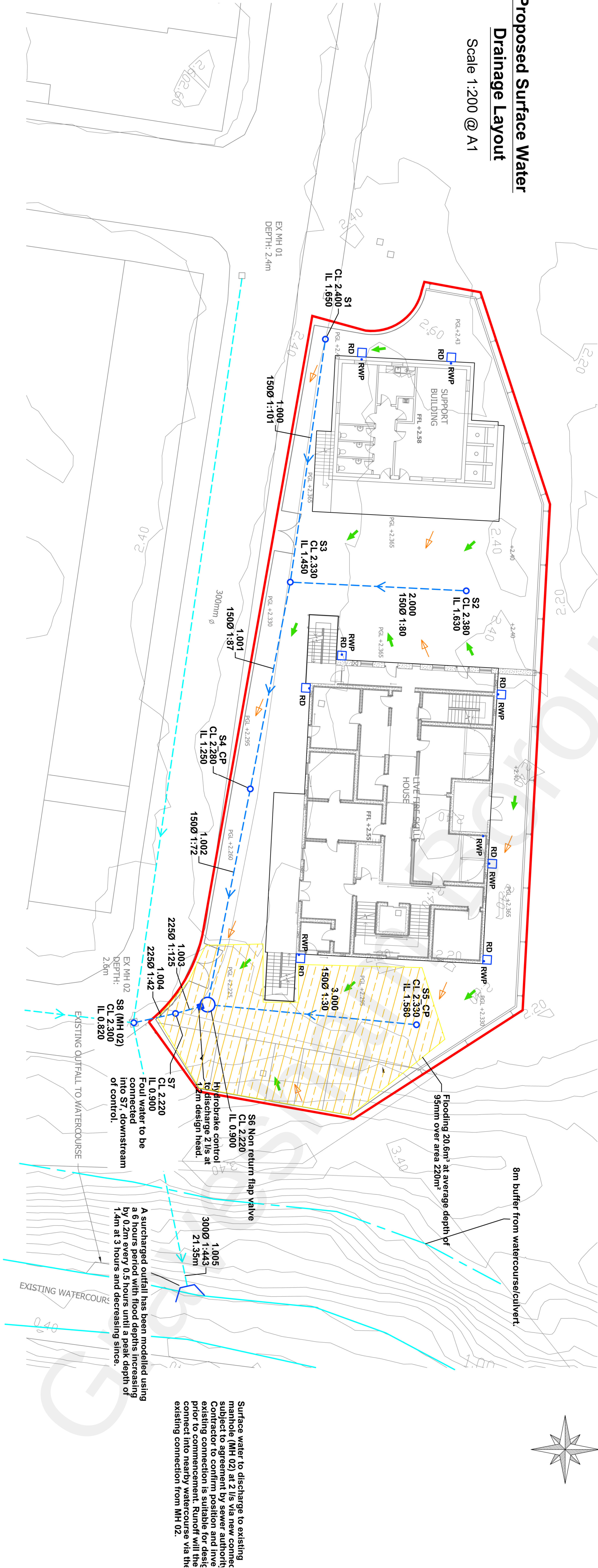
Permeable membrane due to shallow groundwater table.

Base of sub-base to fall towards pick-up features. Outlet pipe to have flexible top hat arrangement or other as designed and specified by manufacturer.

Design to be confirmed by manufacturer.

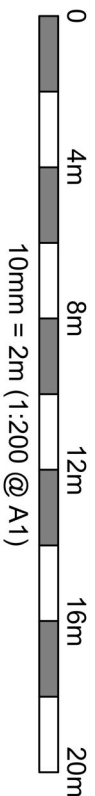
Proposed Surface Water Drainage Layout

Scale 1:200 @ A1



Key:

- Rain water pipe**
- RWP
- Surface manhole with:**
- S1 Reference number
 - CL 2,400 Cover level
 - IL 1,700 Invert level
- Watercourse/culvert**
- Watercourse/culvert
 - 8m buffer
 - Flooding extent
- Surface water drain**
- Surface water drain
 - Existing surface water drain
 - Catchpit
- Outfall**
- Outfall
 - Overland flow routes
 - Spot level, assumed



Surface water to discharge to existing manhole (MH 02) at 2 l/s via new connect subject to agreement by sewer authority. Existing connection is suitable for design prior to commencement. Runoff will then connect into nearby watercourse via the existing connection from MH 02.

A surcharged outfall has been modelled using 6 hours period storm depths increasing to 20.0mm at 5.15m and decreasing to 1.4m at 3 hours and decreasing since.

Signed off By:
Mehrdad Bahai, PhD, CEng, MICE
For Construction
13/01/2023

Rev	Date	Initial Issue	Detail	DS	WG
P01	13.01.23				

Adkins
CONSULTANTS
For the Construction Industry

Project:
Specialist Firearms Command
SCO19, Wharf Road, Gravesend

Drawing Title:
Proposed Surface Water
Drainage Layout

GeoSmart
Information

Scale: 1:200 @ A1
Drawn by: MG
Checked by: MG
Date: Jan. 2023

Status: Preliminary
Drawing No: 77443.02 100
Issue: P01

- Notes:
- Do not scale from this drawing.
 - All dimensions are in millimetres unless otherwise stated.
 - This drawing is to be read in conjunction with all other relevant drawings.
 - All drainage to be constructed to SSG Design and Construction Guidance, current British standards and building regulations and other relevant standards.
 - Drainage down pipes to be confirmed by architect / M&E engineer. Internal SVPs and other internal fluid drainage to be designed by M&E engineer. Rain water pipe to be confirmed by architect / M&E engineer.
 - Contractor to confirm locations of existing services prior to commencement of site and to arrange for any necessary connection to existing services.
 - All specialist drainage components such as attenuation tanks, flow control and pumping stations to be designed and installed as per manufacturer's requirements.
 - Cover levels and invert levels are in metres unless otherwise stated. If cover levels change from assumed then drainage design should be re-assessed, especially in regards to attenuation.
 - Assumed linear drains not required at building thresholds, to be confirmed by external levels consultant.
 - Private surface water pipes to be 150mm with minimum fall of 1 in 100.
 - Permeable paving and outlets to be as manufacturer design and recommendations.
 - Proposed ground levels will influence the storage capacity of up features. When proposed ground levels are complete the permeable paving design should be reviewed to ensure sufficient storage is provided and that the drainage pick up features are correctly located.
 - Permeable paving sub-base should fall towards the drainage pick up features. Perforated pick up drains should fall towards the drainage pick up features.
 - Minimum cover to drainage pipes in garden or patio areas to 60mm, in driveway 0.9m, in road 1.2m, otherwise concrete protection will be required.
 - Drainage pick up features in garden and patio areas to 60mm, in driveway 0.9m, in road 1.2m, otherwise concrete protection will be required.
 - As the site has previously been developed an existing catchpit, 150mm diameter, will be retained.
 - Discharge is to watercourse. A surcharged outfall has been modelled to account for rising water levels.
 - Design is for planning purposes only and not for construction to ensure all available information is considered and any assumed information should be verified.
 - Design should be reviewed in light of any additional information or on validation or otherwise of any assumptions.