

Calcinotto

civil and structural engineers

114204

Outline Flood Risk and Drainage Statement for
Live Fire Building
Hampshire Fire & Rescue Head Quarters
Leigh Road
Eastleigh
SO50 9SJ

July 2022

Revision 1.0

Produced By

Matthew Roe
Principal Civil Engineer

Checked By

Content

Outline Flood Risk and Drainage Statement for Live Fire Building Hampshire Fire & Rescue Headquarters, Eastleigh.

Section	Title	Page
1	Background	4
2	Flood Risk	5
3	Existing Site Conditions	7
4	Southern Water	8
5	Development Proposals & Drainage Strategy	9
6	Water Quality	11
7	Management and Maintenance Plan	12
8	Geological Situation	13
9	Conclusions	14
A	Architects Layout Plan	15
B	Southern Water Trade Effluent Consent	16
C	Calculations	17
D	Drainage Scheme	18

1 Background

- 1.1 Hampshire Fire & Rescue have appointed Morgan Sindall to design and deliver a Live Fire Training venue at their Headquarters Site Eastleigh.
- 1.2 The scheme is to replace an existing live fire training facility consisting of modular containers and gas driven live fire units, the units are no longer fit for purpose and the smoke management system is aging.
- 1.3 The new building will be constructed from concrete and will allow better training of fire fighters to be able to fight fires of different types, multistorey buildings, basements, workshops and even entry into ships holds via hatches.
- 1.4 The fires will be created using timber pallets rather than gas, which will create a more consistent experience of fighting real fires rather than gas generated flames.
- 1.5 The smoke from these fires will pass through a new Minerva smoke filtration unit.

2 Flood Risk

- 2.1 Reference to the GOV.UK web site identifies the application site to sit within Flood Zone 1 for River and sea flooding.
- 2.2 The application site is not shown at being at risk of flooding from Rivers or Sea.
- 2.3 It also references that the site has a Low Risk of surface water flooding and is subject to "0-300mm" depth of surface water flooding. This can be seen in figures 1 & 2 below, illustrating that the possible flood depth from this source is below 300mm. The surface water flooding is constrained to areas where there are extensive service yard levels the site is not shown at being at risk of off site flooding onto the site.



Figure 1 –Flooding from Rivers & Sea

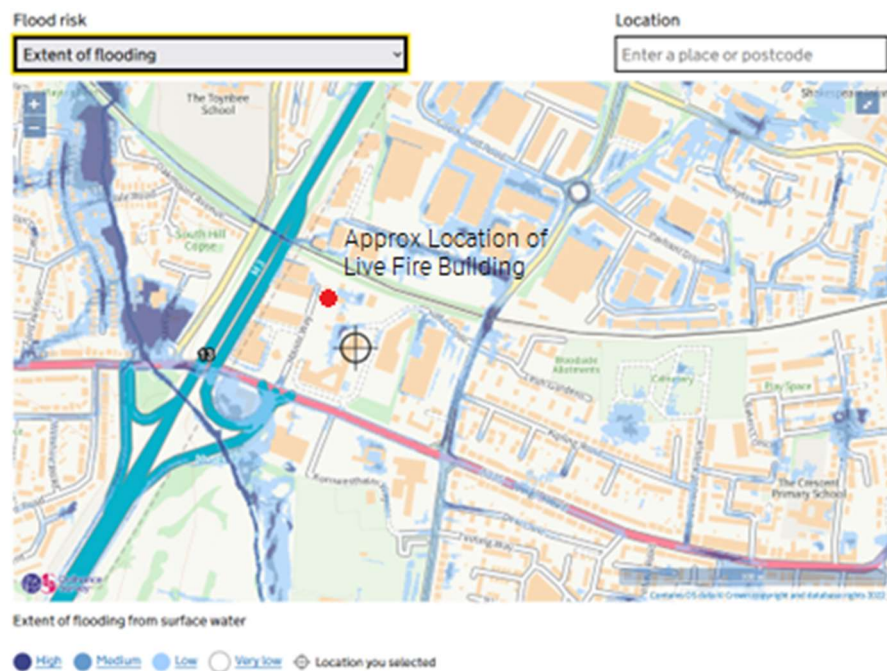


Figure 2 – Low Risk (Below 300mm) – Surface water flood risk depth

- 2.4 The site of the new Live Fire Building is located within the wider Eastleigh Headquarters Site, there are locations within the site that have been shown to be at risk of surface water ponding these are primarily located within existing service yards areas.
- 2.5 There are no artificial water features i.e., Reservoirs / canals near the site and therefore the risk from these is none.
- 2.6 Any surcharging of public sewers will be contained with the roadways outside of the site and therefore the risk from these is low.

3 Existing Site Conditions

- 3.1 The existing site is located on a large parcel of land which is within the large site of the Hampshire Fire & Rescue site. The site is bounded to the north by a railway line to the south Leigh Road and industrial area to the West (Manor Way) and retail park to the east. The site itself is primarily
- 3.2 The site has a National Grid Reference of SU44229 19627 and is within Eastleigh Borough Council administration area, approximate postcode SO50 9SJ. As shown on the image below, the actual site is identified as Point B: -



- 3.3 The site of the Live Fire Building is currently a landscaped bund (previously excavated on site) within the Headquarters site. We have calculated the Greenfield Run Off Rate for the site based on the redeveloped site area of 1000m².

Development Site Area	1000m ²
QBar	0.55l/s
1:1	0.47l/s
1:30	1.28l/s
1:100	1.77l/s
1:200	2.07l/s

The scheme is only a partial redevelopment of the site the other parts of the site remain fully operational and are there are various ongoing projects being undertaken to the existing buildings. Drainage from these works is not being changed.

4 Southern Water

- 4.1 Southern Water have provided a Trade Effluent consent for the Live Fire Building, the existing Headquarters site is drained by a mixture of positive SW drains (to sewers) and infiltration systems. As such the water generated from the training exercises will discharge ultimately to public sewers in Leigh Road. Trade Effluent Consent is enclosed in Appendix
- 4.2 The redeveloped area (roof water) is to be discharged a soakaway whereas the flows generated from the training exercises will discharge to a foul drain on site and ultimately into the foul sewer in Leigh Road.
- 4.3 The external areas outside of the training area are currently hard paved and these areas will drain to the existing SW system for the site which maybe SW sewers in Leigh Road or existing infiltration devices.

5 Development Proposals & Drainage Strategy

5.1 The site is the existing Headquarters for Hampshire Fire & Rescue, the proposed development is for a relatively small area of the site approx. 1000m². The proposed site plan from the architect can be found in Appendix A.

5.2 The using the existing topographical survey and the proposed site plan we have assessed the proposed and existing impermeable areas.

Total Existing site Area	4.5000ha
Existing Impermeable Area (Live Fire Area)	0.0400ha
Proposed Impermeable Area (Live Fire Area)	0.1000ha
Area drained infiltration (roof)	0.0130ha
The remaining areas (Used Fire Water)	0.0470ha

Table 1: Proposed & Existing Areas

5.3 The roof will drain to a soakaway within the works area, approximately a 5m swathe around the new building will be drained to a perimeter intercept channel which due to its nature may have used fire water discharged onto it, so this will be diverted to the foul drainage system and will be discharged in accordance with the Trade Effluent Consent permission.

5.4 The surrounding area will be resurfaced and will continue to discharge into the existing SW system, the existing gullies will have additional pollution control added in the form of smart gully adapters retrofitted into the existing gully pots. The smart gully is a unique Smart Sponge® Technology that removes hydrocarbons from stormwater, Smart Gully® Adapters are available as purpose designed units that fit into the rodding eye of a standard road gully and skim the surface of the water to remove oil contamination without affecting flow or maintenance procedures – producing a recyclable solid waste. That can be disposed of in general waste or used as fuel in biomass systems once dry.

5.5 In accordance with best practice the surface water drainage strategy will be designed with consideration to Building Regulations and CIRIA C753. In accordance with the hierarchy, we have identified below

Building Regulations Part H3 (2002):
(1) Adequate provision shall be made for rainwater to be carried from the roof of the building. (2) Paved areas around the building shall be so constructed as to be adequately drained. (3) Rainwater from a system provided pursuant to sub-paragraphs (1) or (2) shall discharge to one of the following, listed in order of priority: (a) An adequate soakaway or some other adequate infiltration system; or, where that is not reasonably practicable, (b) A watercourse or, where that is not reasonably practicable, (c) A sewer

Table 2: Part H3 Hierarchy

SUDS	Viability	Rationale
Living Roofs	No	The roof of the structure is to be concrete due to the fire training exercises that will be undertaken in the Live Fire Building.
Ponds/Wetlands/Detention Basins	No	Not Appropriate for site use
Swales/Filter Drains	No	Not Appropriate for site use
Soakaways	Yes	Only for uncontaminated Roof Area.
Porous Paving (Infiltration)	Possible	Subject to confirmation of Hampshire Fire & Rescue Operational requirements.
Porous Paving (Attenuation)	Possible	Will be considered if the ground conditions aren't supportive of infiltration and/or possible contamination prevents the use of infiltration paving, flow rates will be limited to circa 1l/s.
Attenuation/ Source Control	No	Infiltration being used and contaminated flows

Table 3: SuDS provision assessment

5.6 Any new surface water drainage will be designed to comply with current design guidance using the following storm return periods and latest climate change allowances as contained within the Guidance document dated July 2020 – Flood Risk Assessments – Climate Change Allowances.

- 1 in 1 year no climate change
- 1 in 30 year + 20% climate change
- 1 in 100 year + 40% climate change

6 Water Quality

- 6.1.1 Adequate treatment must be delivered to the water run-off to remove pollutants through SuDS devices, which are able to provide pollution mitigation. Pollution Hazards and the SuDS Mitigation have been indexed in the specialised literature CIRIA 753 'The SuDS Manual'. This is determined by the following restriction:

$$\text{Total SuDS Mitigation Index} \geq \text{Pollution Hazard Index}$$

- 6.1.2 The Pollution hazard Indices are summarised in Table 4 – Summary of Pollution Hazard Indices for different land Use Below:

POLLUTION HAZARD INDICES FOR DIFFERENT LAND USE CLASSIFICATIONS				
Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Roofing	V. Low	0.3	0.2	0.05
Parking Areas (e.g. residential roads)	Low	0.5	0.4	0.4

Table 4 – Summary of Pollution Hazard Indices for different Land Use

- 6.1.3 The Mitigation Indices direct from the CIRIA C753 SuDS Manual Version 6 of the proposed SuDS techniques are summarised in Table 5 – Indicative SuDS Mitigation Indices below.

INDICATIVE SuDS MITIGATION INDICES FOR DISCHARGES TO GROUND			
SuDS Component	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Permeable Pavement	0.7	0.6	0.7

Table 5 – Indicative SuDS Mitigation Indices

- 6.1.4 Using the above SuDS features will ensure sufficient protection to the Water Environment by reducing the amount of pollution in run off, in line with the Water Framework Directive.

7 Management and Maintenance Plan

- 7.1.1 The site is owned managed and operated by Hampshire Fire and Rescue Service and is their headquarters site as such the ongoing maintenance of the site will be by Hampshire Fire Rescue Maintenance Team.
- 7.1.2 The installed drainage will require routine cleaning of gullies and chambers associated with the Live Fire Training; it is anticipated that all gullies associated with the live fire exercise will be visually inspected weekly to remove debris build up from the real fire burning exercises and disposed of in appropriate waste skip.
- 7.1.3 The below ground drainage pipe work will need to be CCTV surveyed initially on an annual basis reducing to every five years.
- 7.1.4 The soakaway catchpits will need to be visually inspected annually and the sumps have sediment build up removed as necessary, the soakaway feature will need to be CCTV surveyed every five years and high pressure jetted if required.
- 7.1.5 Block Paving will need to be swept using no vacuum equipment as and when necessary, if permeable paving is used this should be every year.
- 7.1.6 The Smart Gullies should last in excess of 2years, however these should be inspected every year and weighed when the weight is in accordance with manufacturers requirements, these should be replaced and disposed of in general waste with new filters installed from Naylor.

8 Geological Situation

- 8.1 Inspection of the BGS web site confirms the site is located within River Terrace Superficial Deposits, the bedrock deposits are the Wittering Formation.



Bedrock & Superficial Deposits from BGS

- 8.2 We have also reviewed the DEFRA magic map which identifies the site at being at a medium risk of groundwater flooding



9 Conclusions

- 9.1 The site is within Flood Zone 1
- 9.2 The site is at a Low risk of surface water flooding, primarily associated with the hardstanding areas within the wider HFRS site, with only a small element of flooding indicated on Environment Agency plans which is related to topography of the site not flooding from other sources
- 9.3 The site is at a Low risk of flooding from other sources including ground water, artificial and existing public drainage systems.
- 9.4 Surface water from the roof area to be disposed of via infiltration, external areas within the immediate area around the new training building will be drained to foul sewers in accordance with Southern Water Trade Effluent Consent. Other external areas will be connected to existing surface water drains in the area as these areas are already impermeable.

A Architects Layout Plan

KEY

- PROPOSED SITE BOUNDARY FOR LIVE FIRE TRAINING CENTRE**
3631.5 sqm / 39089.1 sqft
- SITE OWNED BY APPLICANT OUTSIDE OF THE PRE-APPLICATION BOUNDARY**
46958 sqm / 505451.7 sqft
- OPCC POLICE FACILITIES OUTSIDE OF THE PRE-APPLICATION BOUNDARY.**
SUBJECT TO PLANNING APPLICATION APPROVAL.
PLANNING APPLICATION REFERENCE F/20/88055
2829.5 sqm / 30456.4 sqft (Approx)- SITE LAYOUT TBC

ACCESS KEY

- MAIN ENTRANCE TO HFR LIVE SITE**
- PROPOSED FIRE HOUSE TRAINING AREA ACCESS**
2 x 4M APPLIANCE GATE
1 x 1.2M PEDESTRIAN GATE



SOURCE INFORMATION:
Survey information taken from Hampshire County Council, received from client on 2020.03.24. File reference: 30008000010-HFRSHQTrainingCentre&FleetMaintenanceCentre. Topographical surveys provided by Morgan Sindall 2022.06.21

Fire House information based upon information provided by: Design Team & Client feedback 2022.06.06 > 2022.06.27. Crofton, received from client on 2020.11.16 Drawing reference: 10077315-CEL-ST-ZZ-DR-X-NA-0003

Police Facilities information taken from Eastleigh Planning Portal on PDF format. Drawing reference: E03869-038 and additional information provided by the client 2022.06.27

Revisions: A MH JLS 13/07/2022 Planning Issue.

PLANNING

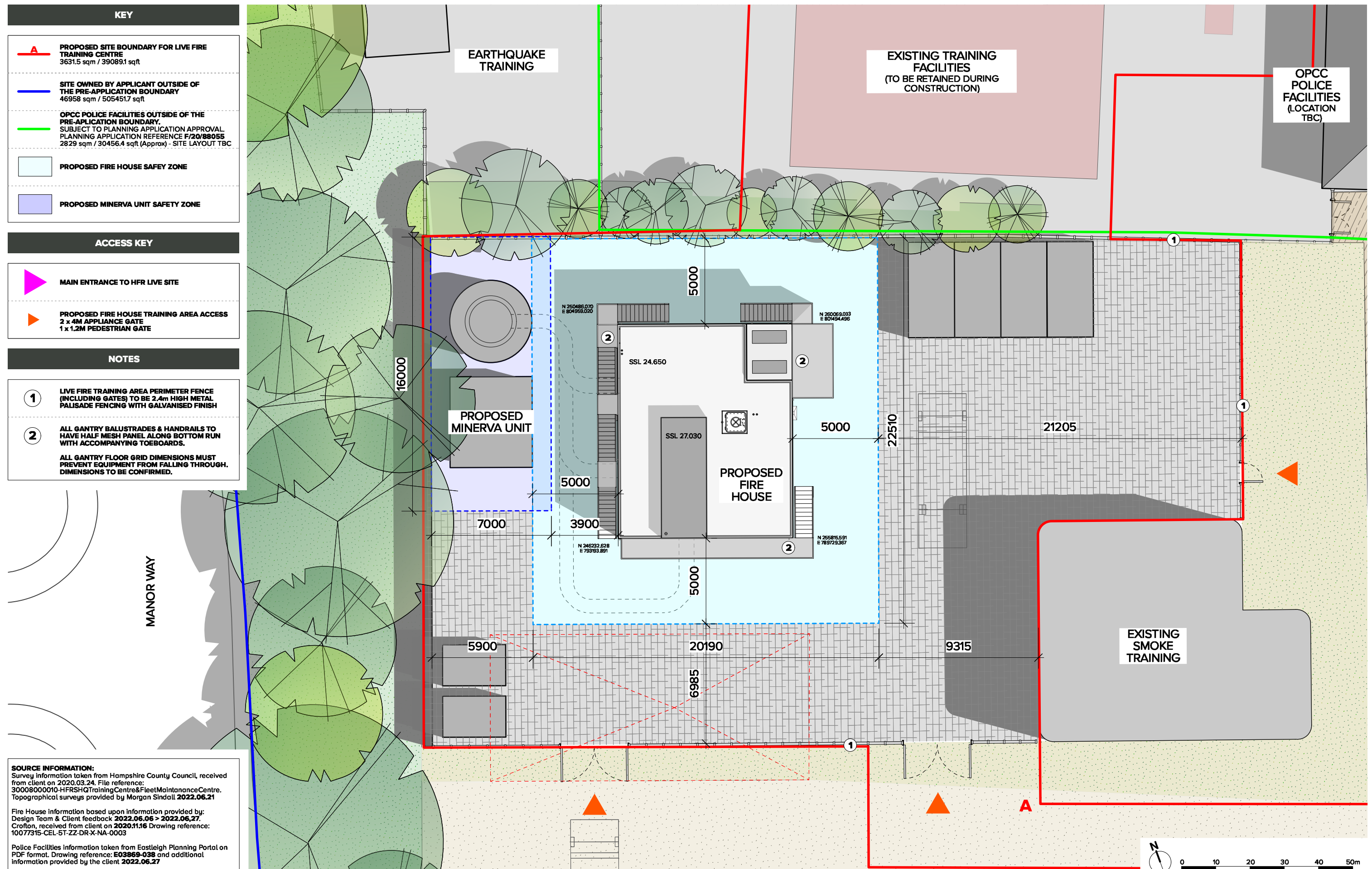
scale 1:1000 @ A3 date 13/07/2022
drawn MH checked JLS

www.cube-designltd.co.uk

T: 01425 481 999

1387-P005 (A)

cube_design ©



B Southern Water Trade Effluent Consent



Fire Fighting Foam Training Effluent Discharge Agreement

1. Introduction

The scope of this document is to ensure effective co-operation between Southern Water Services (SWS) and Hampshire & Isle of Wight Fire and Rescue in dealing with the disposal of run-off water contaminated with either detergents, training foam or small residual amounts of operational fire fighting foam to foul and/or combined sewers at locations agreed between Southern Water and Hampshire & Isle of Wight Fire and Rescue.

2. Working relationship

We will seek to build on the good working relationship that already exists between both parties by having an open and constructive dialogue; and aspire to the same aim of achieving a clean healthy and diverse environment through effluent management.

3. Review

This document is intended to be a working document and may be updated should it be deemed appropriate by SWS following operational experience of the policy.

Should Hampshire & Isle of Wight Fire and Rescue wish for the policy to be amended they should write to Southern Water with the request. SWS will consider the request but are under no obligation to amend the Agreement.

4. Policy

Hampshire & Isle of Wight Fire and Rescue foam training will only be carried out at sites agreed between SWS and Hampshire Fire and Rescue (see Appendix A).

The following conditions shall apply to all discharges:

- **Foam training shall only take place in dry weather conditions.**
- **Foam training shall only take place when dry weather conditions have preceded the training date for 24 hours. During periods of heavy or prolonged rainfall in the immediate area of the training venue Hampshire & Isle of Wight Fire and Rescue will liaise with SWS regarding the conditions and consider postponing foam training if SWS advise of an unacceptable risk.**
- **Should there be more than one fire station within a Wastewater Treatment Works (WTW) catchment, then only one foam training exercise will be permitted at any one time.**
- **Should there be any operational issues, Hampshire & Isle of Wight Fire and Rescue will cease the foam training immediately on request of Southern Water Services. These may include, but are not limited to, pumping station issues, flooding, sewer surcharging, and pollution incidents.**
- **Hampshire & Isle of Wight Fire and Rescue must keep a record of all foam training exercises, including date, time, location and activity. The information shall be made available to Southern Water if requested.**

Signed on behalf of Southern Water

Signed on behalf of Hampshire & Isle of Wight FR



Suzannah Maddock
Trade Effluent Manager

FRS Officer

Appendix A

List of Fire Stations and associated receiving Wastewater Treatment Works

Fire Stations

WTW

EASTLEIGH HQ

CHICKENHALL EASTLEIGH WTW

C Calculations

GFFR Calculation

Soakaway Calculations

Calculated by: Matthew Roe

Site name: Live Fire

Site location: HFRS HQ Eastleigh

Site Details

Latitude: 50.97434° N

Longitude: 1.37105° W

Reference: 1672928845

Date: Jul 25 2022 14:24

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Runoff estimation approach: IH124

Site characteristics

Total site area (ha): 0.1

Methodology

Q_{BAR} estimation method: Calculate from SPR and SAAR

SPR estimation method: Calculate from SOIL type

Soil characteristics

Default

Edited

SOIL type: 4 4

HOST class: N/A N/A

SPR/SPRHOST: 0.47 0.47

Hydrological characteristics

Default

Edited

SAAR (mm): 788 788

Hydrological region: 7 7

Growth curve factor 1 year: 0.85 0.85

Growth curve factor 30 years: 2.3 2.3

Growth curve factor 100 years: 3.19 3.19

Growth curve factor 200 years: 3.74 3.74

Notes

(1) Is $Q_{BAR} < 2.0$ l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is $SPR/SPRHOST \leq 0.3$?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

Default

Edited

Q_{BAR} (l/s): 0.55 0.55

1 in 1 year (l/s): 0.47 0.47

1 in 30 years (l/s): 1.28 1.28

1 in 100 year (l/s): 1.77 1.77

1 in 200 years (l/s): 2.07 2.07

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at www.uksuds.com. The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at www.uksuds.com/terms-and-conditions.htm. The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)
Roof Soakaway	0.013	5.00	16.400	31.784	61.873	2.500

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	20.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	------

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	20	0	0
100	40	0	0

Node Roof Soakaway Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.11988	Safety Factor	2.0	Invert Level (m)	13.900
Side Inf Coefficient (m/hr)	0.11988	Porosity	0.95	Time to half empty (mins)	369

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	4.0	0.0	1.600	4.0	16.0	1.601	0.0	16.0

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
240 minute winter	Roof Soakaway	232	14.365	0.465	0.4	1.8166	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)
240 minute winter	Roof Soakaway	Infiltration	0.1

Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
240 minute winter	Roof Soakaway	228	15.055	1.155	1.0	4.5085	0.0000	OK

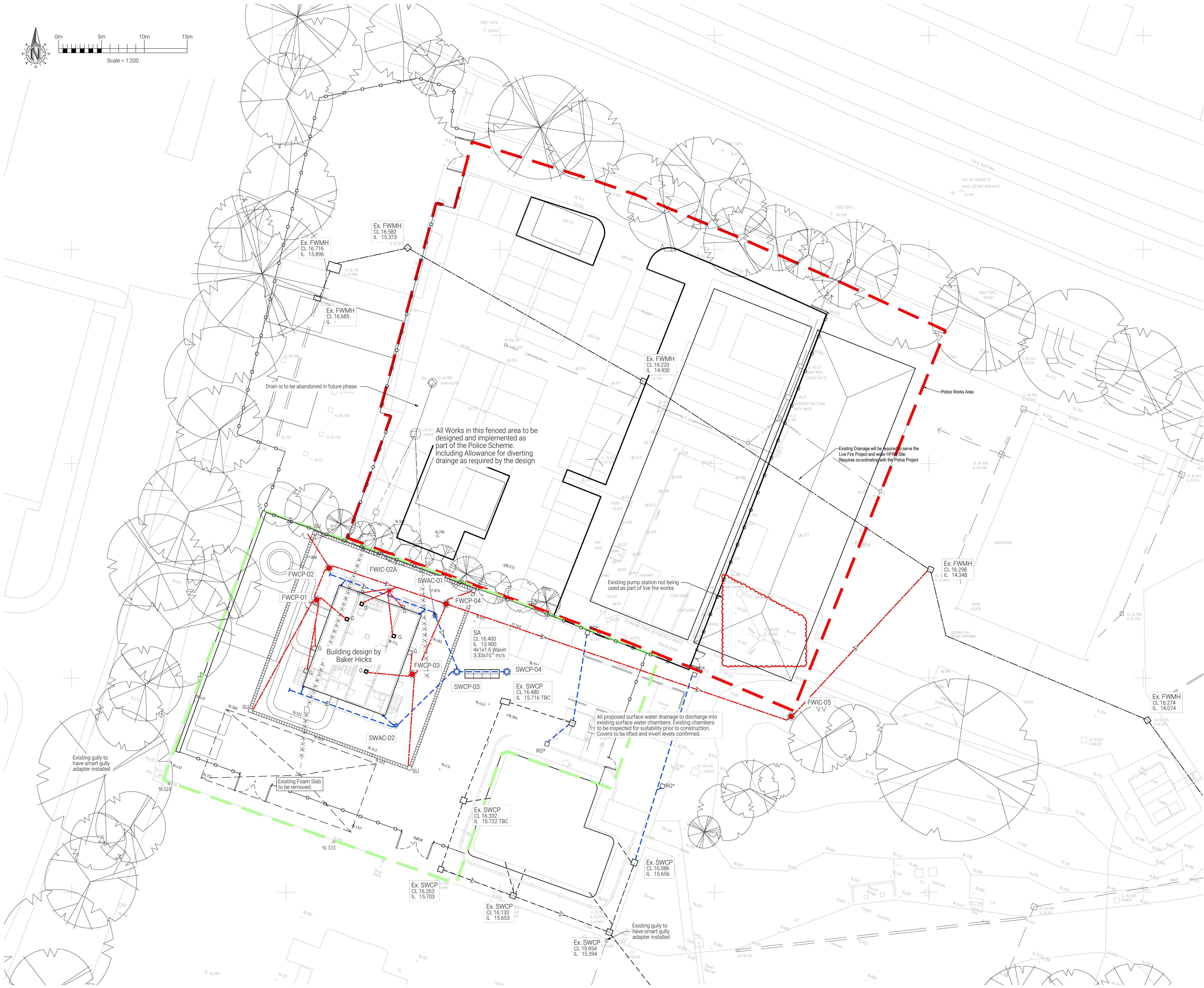
Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)
240 minute winter	Roof Soakaway	Infiltration	0.2

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
240 minute winter	Roof Soakaway	224	16.006	2.106	1.5	6.3010	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)
240 minute winter	Roof Soakaway	Infiltration	0.3

D Drainage Scheme



Notes:

1. This drawing is to be read in conjunction with all of the relevant architects, engineers and specialist sub-contractor drawings and specifications.
2. Any discrepancies between the engineers and the architects drawings to be referred to the architect before proceeding. Drawings must not be scaled.

Foul Water Manhole Schedule		
Manhole No.	Cover Level (m)	Invert Level (m)
FWCP-01	16.480	15.715 + Sump
FWCP-02	16.480	15.680 + Sump
FWIC-02A	16.480	15.720
FWCP-03	16.480	15.715 + Sump
FWCP-04	16.465	15.485 + Sump
FWIC-05	16.605	14.785

Surface Water Manhole Schedule		
Manhole No.	Cover Level (m)	Invert Level (m)
SWAC-01	16.460	15.920
SWAC-02	16.480	15.945
SWCP-03	16.400	13.900+sump
SWCP-04	16.400	15.900+sump

Drainage Legend

- Existing Private SW Sewer (& Manhole)
- Existing Private FW Sewer (& Manhole)
- Proposed SW Sewer (& Manhole)
- Proposed FW Sewer (& Manhole)
- SU--- Drainage Channel (with Sump Unit)
- ××××× Pipeline to be Removed / Abandoned
- Site Boundary
- Wavin Cellular Soakaway
- RG* 450 Road Gully with 'Smart Sponge' adapter

P4 20.07.22 Updated to suit revised outlet information.
P3 12.07.22 Updated to revised site plan. Soakaway added.
P2 29.01.21 Updated for revised site plan.
P1 22.01.21 Drawn.
Rev Date Description

Calcnotto
Jensen House
42 Commercial Rd
Poole, BH14 0HJ

01202 237237
info@calcnotto.co.uk
www.calcnotto.co.uk

Client
Hampshire Fire & Rescue Service

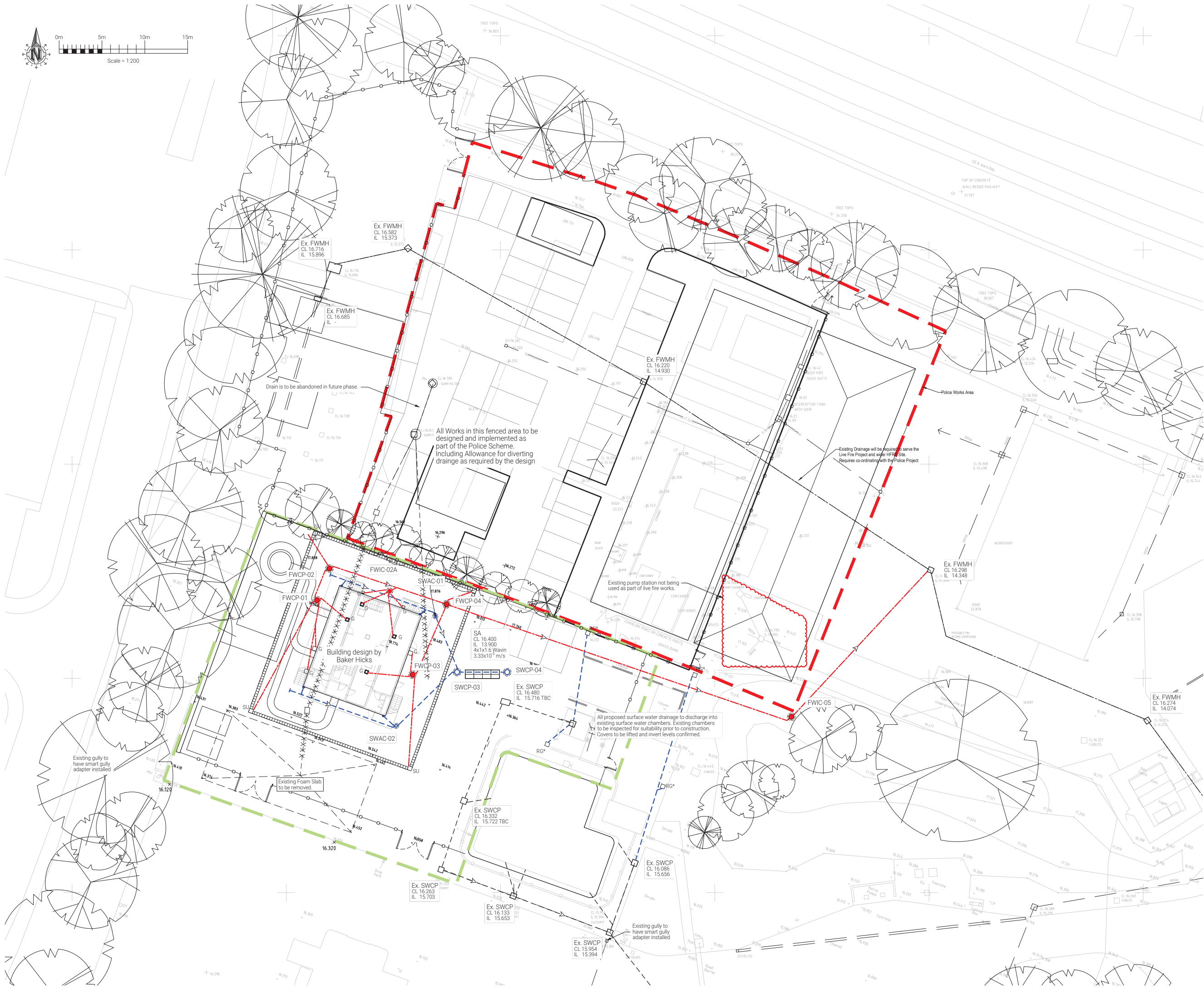
Project Title
Eastleigh Live Fire Training Area

Drawing Title
Outline Drainage Plan

Drawing Status
Stage 1

Originator No.	Rev by	Chk by	Scale
114174	MC	MJR	1:200 @ A1

PROJECT (ORIGINATOR) ZONE (LEVEL) TYPE (ROLE) NO.	Revision
114174-CAL-XX-XX-DR-D-0010	P4



Notes:

1. This drawing is to be read in conjunction with all of the relevant architects, engineers and specialist sub-contractor drawings and specifications.
2. Any discrepancies between the engineers and the architects drawings to be referred to the architect before proceeding. Drawings must not be scaled.

Foul Water Manhole Schedule		
Manhole No.	Cover Level (m)	Invert Level (m)
FWCP-01	16.480	15.715 + Sump
FWCP-02	16.480	15.680 + Sump
FWIC-02A	16.480	15.720
FWCP-03	16.480	15.715 + Sump
FWCP-04	16.465	15.485 + Sump
FWIC-05	16.605	14.785

Surface Water Manhole Schedule		
Manhole No.	Cover Level (m)	Invert Level (m)
SWAC-01	16.460	15.920
SWAC-02	16.480	15.945
SWCP-03	16.400	13.900+sump
SWCP-04	16.400	15.900+sump

Drainage Legend

- Existing Private SW Sewer (& Manhole)
- Existing Private FW Sewer (& Manhole)
- Proposed SW Sewer (& Manhole)
- Proposed FW Sewer (& Manhole)
- Drainage Channel (with Sump Unit)
- X--- Pipeline to be Removed / Abandoned
- Site Boundary
- Wavin Cellular Soakaway
- RG* 450 Road Gully with 'Smart Sponge' adapter

P4 20.07.22 Updated to suit revised outlet information.
P3 12.07.22 Updated to revised site plan. Soakaway added.
P2 29.01.21 Updated for revised site plan.
P1 22.01.21 Drawn.
Rev Date Description

Calconetto
Janssen House
43 Commercial Rd
Poole BH14 0HJ

01202 237237
info@calconetto.co.uk
www.calconetto.co.uk

Client
Hampshire Fire & Rescue Service

Project Title
Eastleigh Live Fire Training Area

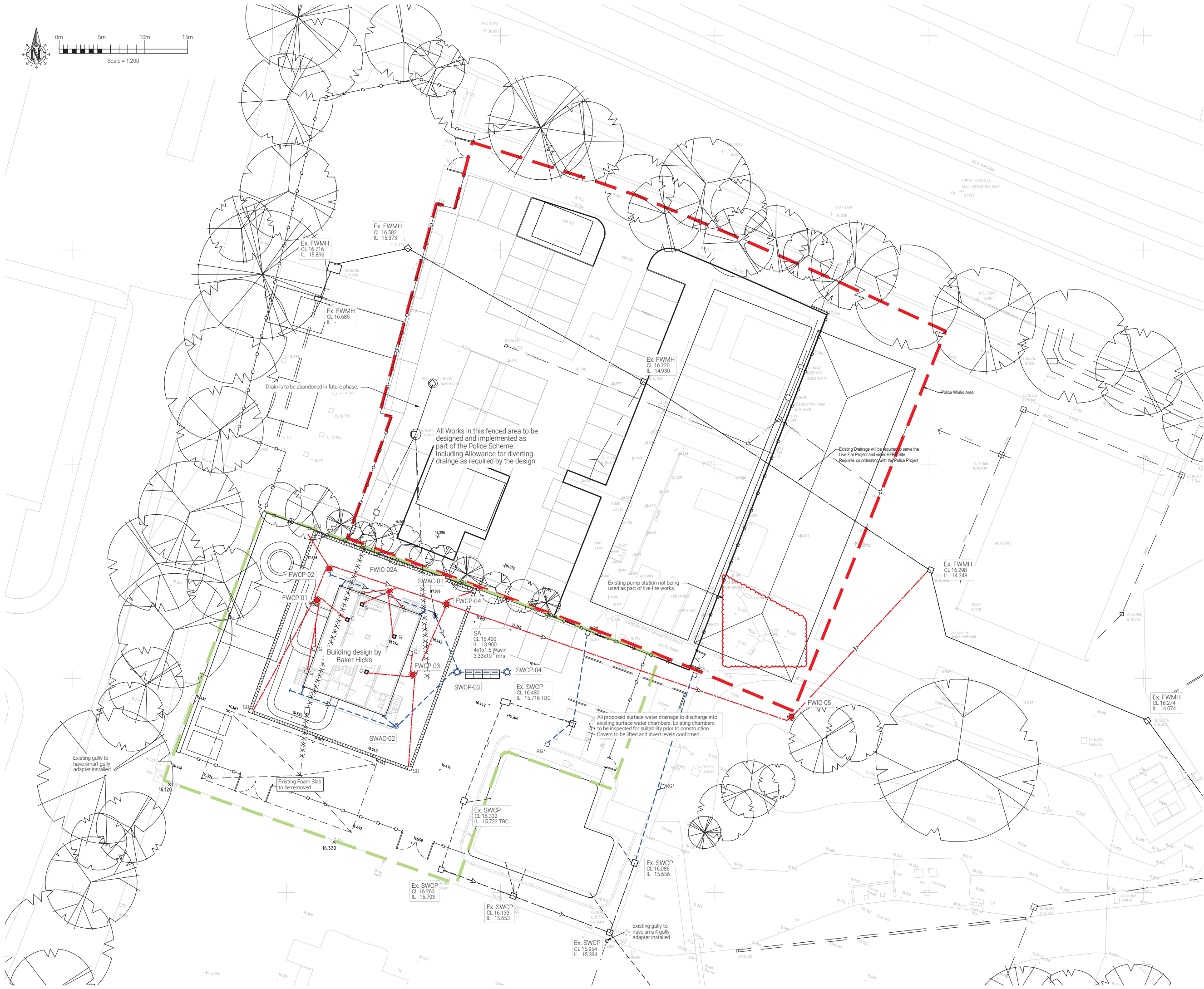
Drawing Title
Outline Drainage Plan

Drawing Status
Stage 1

Originator No.	Rev by	Chk by	Scale
114174	MC	MJR	1:200 @ A1

PROJECT | ORIGINATOR | ZONE | LEVEL | TYPE | ROLE | NO.

114174-CAL-XX-XX-DR-D-0010	P4
----------------------------	----



Notes:

1. This drawing is to be read in conjunction with all of the relevant architects, engineers and specialist sub-contractor drawings and specifications.
2. Any discrepancies between the engineers and the architects drawings to be referred to the architect before proceeding. Drawings must not be scaled.

Foul Water Manhole Schedule		
Manhole No.	Cover Level (m)	Invert Level (m)
FWCP-01	16.480	15.715 + Sump
FWCP-02	16.480	15.680 + Sump
FWIC-02A	16.480	15.720
FWCP-03	16.480	15.715 + Sump
FWCP-04	16.465	15.485 + Sump
FWIC-05	16.605	14.785

Surface Water Manhole Schedule		
Manhole No.	Cover Level (m)	Invert Level (m)
SWAC-01	16.460	15.920
SWAC-02	16.480	15.945
SWCP-03	16.400	13.900+sump
SWCP-04	16.400	15.900+sump

Drainage Legend

- Existing Private SW Sewer (& Manhole)
- Existing Private FW Sewer (& Manhole)
- Proposed SW Sewer (& Manhole)
- Proposed FW Sewer (& Manhole)
- Drainage Channel (with Sump Unit)
- X--- Pipeline to be Removed / Abandoned
- Site Boundary
- Wavin Cellular Soakaway
- RG* 450 Road Gully with 'Smart Sponge' adapter

P4 20.07.22 Updated to suit revised outlet information.
P3 12.07.22 Updated to revised site plan. Soakaway added.
P2 29.01.21 Updated for revised site plan.
P1 22.01.21 Drawn.

Calconetto
Janssen House
43 Commercial Rd
Poole BH14 0HJ

01202 237237
info@calconetto.co.uk
www.calconetto.co.uk

Client
Hampshire Fire & Rescue Service

Project Title
Eastleigh Live Fire Training Area

Drawing Title
Outline Drainage Plan

Drawing Status
Stage 1

Originator No.	Rev by	Chk by	Scale
114174	MC	MJR	1:200 @ A1

PROJECT | ORIGINATOR | ZONE | LEVEL | TYPE | ROLE | NO.

114174-CAL-XX-XX-DR-D-0010	P4
----------------------------	----