

H11930

MARKS HEELEY LTD

**SURFACE WATER DRAINAGE STRATEGY FOR
PROPOSED:**

**WASTE RECYCLING FACILITY AND CONCRETE
BATCHING PLANT,**

**QUATTRO SITE,
SOUTHALL LANE, HAYES, UB2 5XJ**



April 2020

The Stables, Cannons Mill Lane, Bishop's Stortford, Herts CM23 2BN
Tel: 01279 465999

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1.0 PROPOSED DRAINAGE STRATEGY

- 1.1 Planning permission was granted in January 2018 under application reference 01032/E/P44 for a construction and waste recycling facility, concrete batching plant and associated facilities.
- 1.2 The site has subsequently been built out, but not in accordance with the approved plans, so a retrospective application is being made for the revised proposals.
- 1.3 The proposed development remains largely as previously approved in terms of quantum and form of development but with some relocation/ re-siting of structures/ plant.

2.0 BACKGROUND INFORMATION

- 2.1 The original application submission provided a preliminary drainage scheme and comprises of approved Marks Heeley Ltd drawing H11930/ 01revA (24.03.17), and the approved Flood Risk Assessment (Ramboll December 2016).
- 2.2 The original planning permission had Condition 11 attached which required: *'that plans and details of drainage arrangements shall be submitted to and approved in writing by the Local Planning Authority.'* Details to satisfy that condition were submitted in March 2018 but not determined.

3.0 PROPOSED DRAINAGE STRATEGY

- 3.1 This drainage strategy updates information previously provided in light of the amendments to the scheme.
- 3.2 A copy of the latest drainage plan is attached to this report, reference H11930/ 01revF.
- 3.3 The full operational area of the application site is laid to hardstanding.
- 3.4 Due to the nature of the proposed development and the resultant high potential for sediments and contaminants within runoff from on site (due to the concrete batching process), it was previously agreed that infiltration to ground is not a feasible option.
- 3.5 Therefore, it was agreed that providing attenuation in the form of an underground storage tank was the most practical option for the application site, prior to discharge to the public sewer network.
- 3.6 This ensures the proposed development does not create additional runoff that could affect surrounding sites, or put additional load on the existing sewer system which could cause surcharging in peak storm events.
- 3.7 Following the hierarchy of disposal methods, we previously determined the most suitable method of providing surface water drainage to the proposed development.

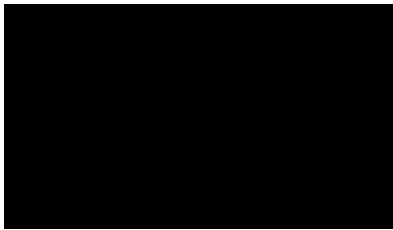
HIERARCHY OF DISPOSAL METHODS	
METHOD	COMMENTS
A. Store rainwater for later use	Proportion of attenuation volume to be re-used
B. Use infiltration techniques	Not allowed
C. Attenuate rainwater in open water features for gradual release	Not allowed
D. Attenuate rainwater by storing in tanks for gradual release	Proposed
E. Discharge rainwater direct to a watercourse	Not possible
F. Discharge rainwater to a surface water sewer	Controlled discharge proposed for volume of water that has not been re-used
G. Discharge rainwater to a combined sewer	Not required
H. Discharge rainwater to a foul sewer	Not required

- 3.8 Re-use of rainwater is a key functional element of the concrete batching plant and waste recycling facility process, as significant volumes of water would be needed for dust suppression and process on site.

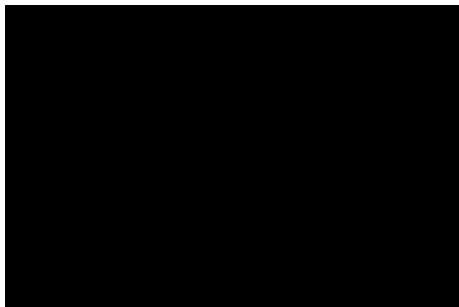
- 3.9 A proportion of the attenuation volume is provided through the proposed water re-use strategy. Grey water from the concrete batching plant is collected into a wedge pit and recycled in the process via stirrer tanks. Likewise general surface water on-site is collected in settlement pits to supply water for dust suppression activities as part of the waste recycling facility operation.
- 3.10 Any additional attenuation storage is provided as necessary in an underground storage tank, prior to controlled discharge to the public sewer network.
- 3.11 The drainage as shown on the attached drawing is installed on site.
- 3.12 Thames Water approval for the connection to the surface water drainage sewer has been obtained and the connection has been made.

4.0 CONCLUSION

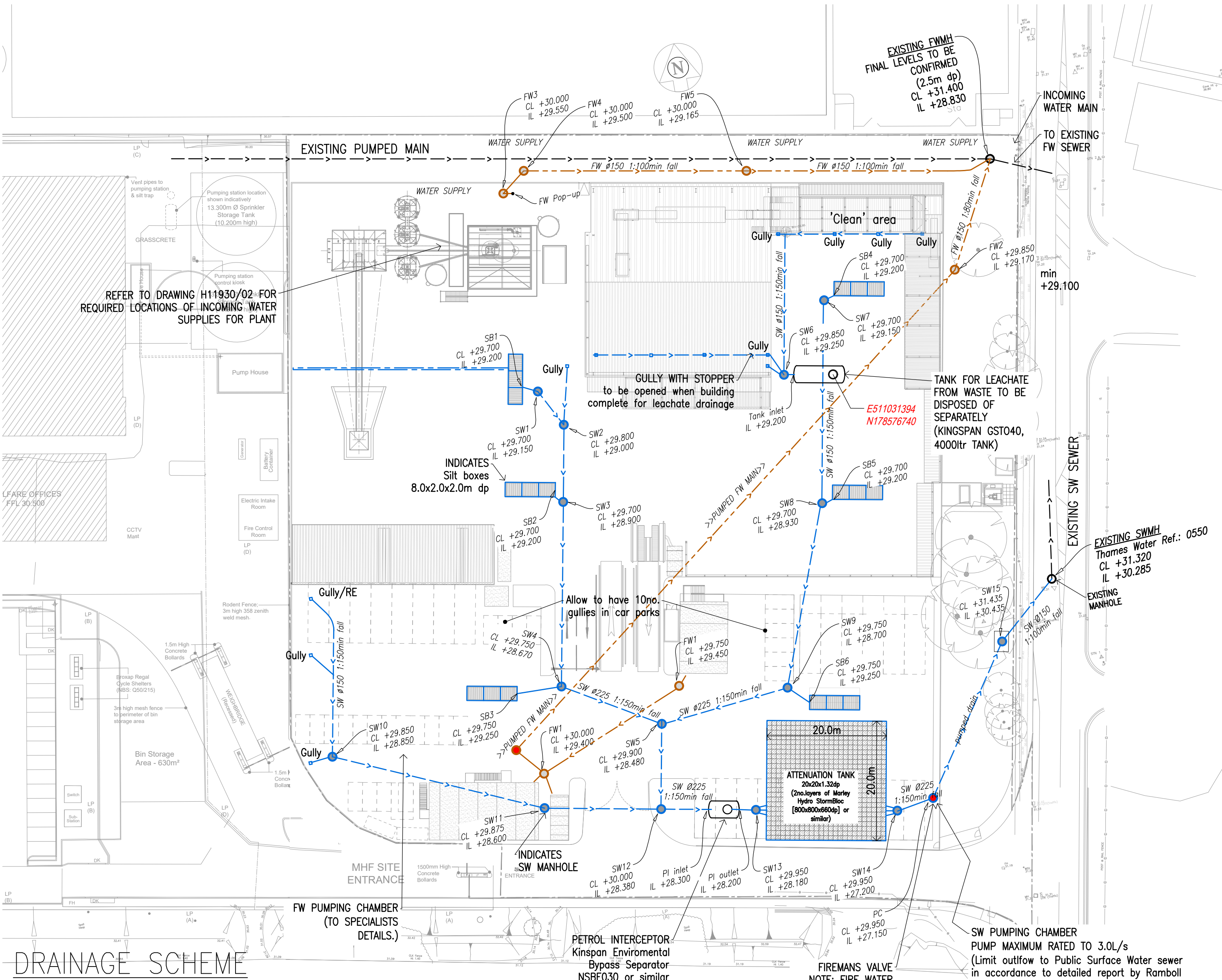
- 4.1 The drainage strategy follows the principles established by the approved scheme from January 2018.
- 4.2 Drainage drawing H11930/ 01revF provides full details of the site wide drainage proposals that have been constructed on site.
- 4.3 Considering the hierarchy of disposal methods, the best option available to us is to install surface water attenuation with a controlled discharge to the surface water sewer, with a proportion of water collected in this volume of attenuation being re-used on site for dust suppression and process on site.
- 4.4 Permission for the connection to the Thames Water sewer has been obtained for the agreed rate of 3.0 l/sec. The site drainage system and attenuation has been designed considering this allowable discharge rate.
- 4.5 The scheme as implemented on site is considered acceptable from a surface water flooding and SUDs point of view.



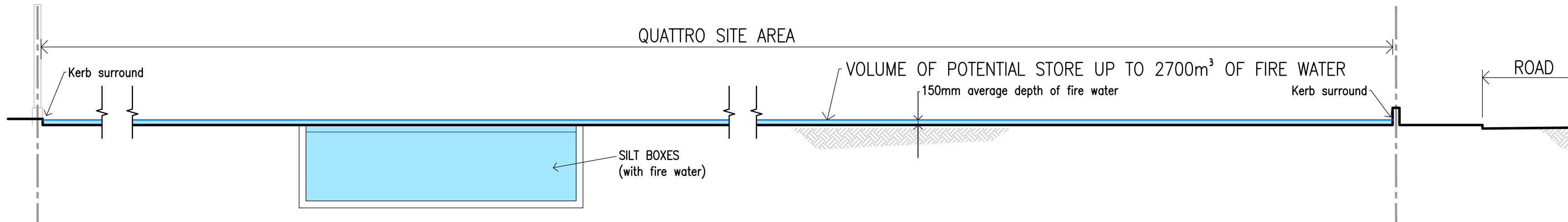
Adam Flack BSc (*Eng*).



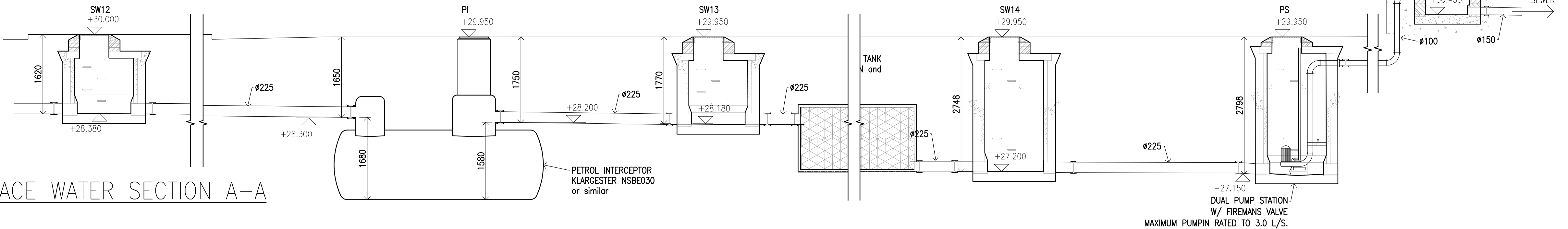
Graham Newman
IEng AMIStructE



DRAINAGE SCHEME
1:500



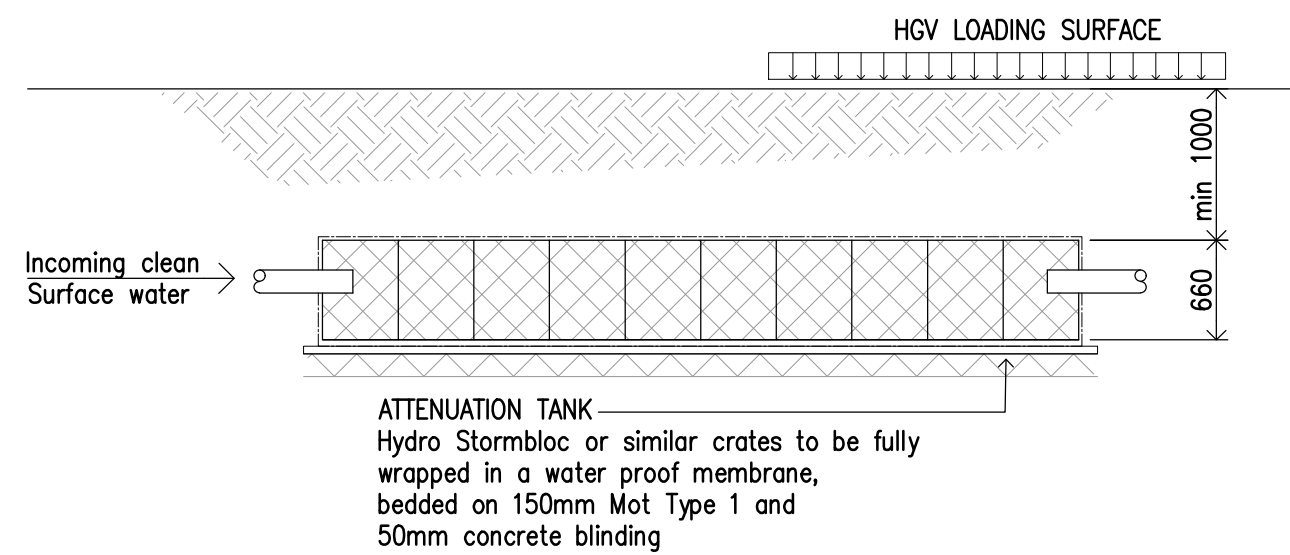
OVERVIEW OF POTENTIAL FIREWATER STORAGE CAPACITY
1:100



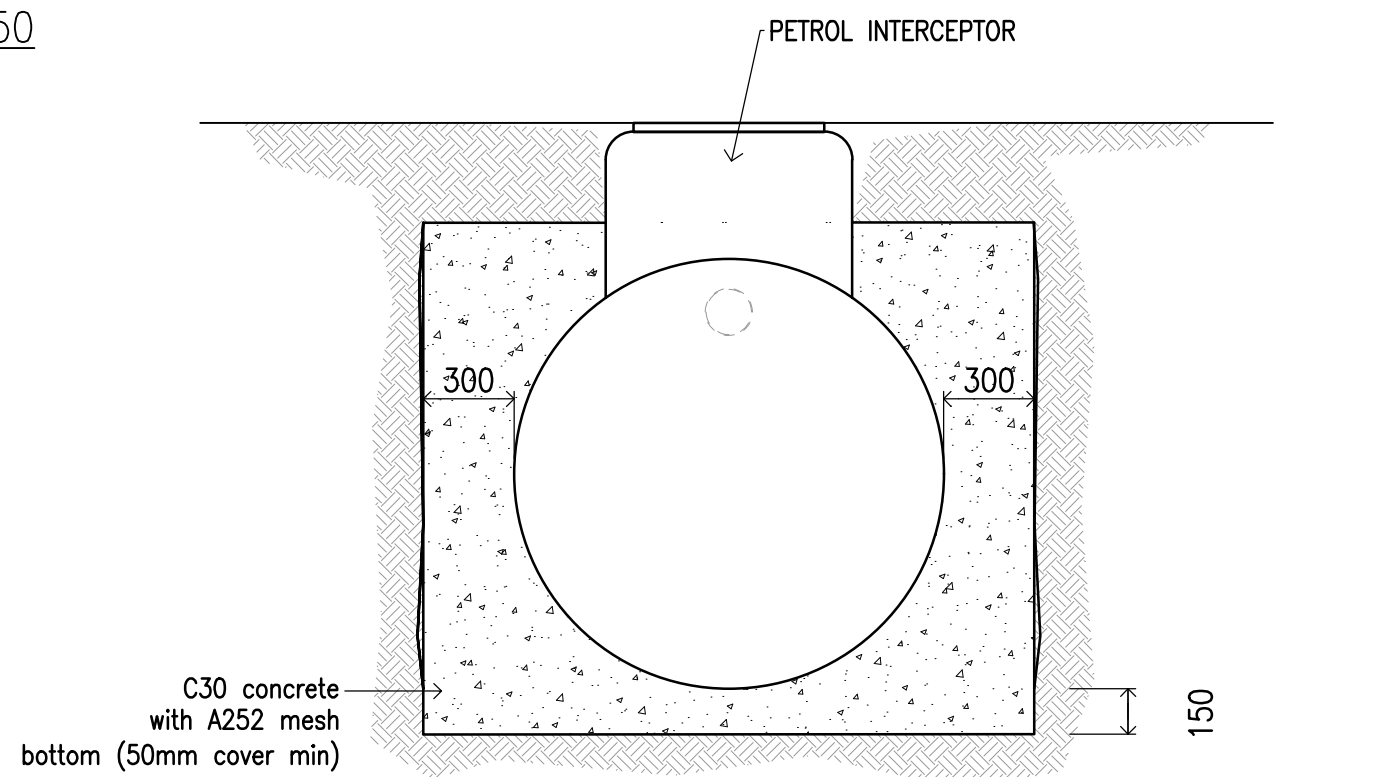
SURFACE WATER SECTION A-A
1:50

Petrol Interceptor Data

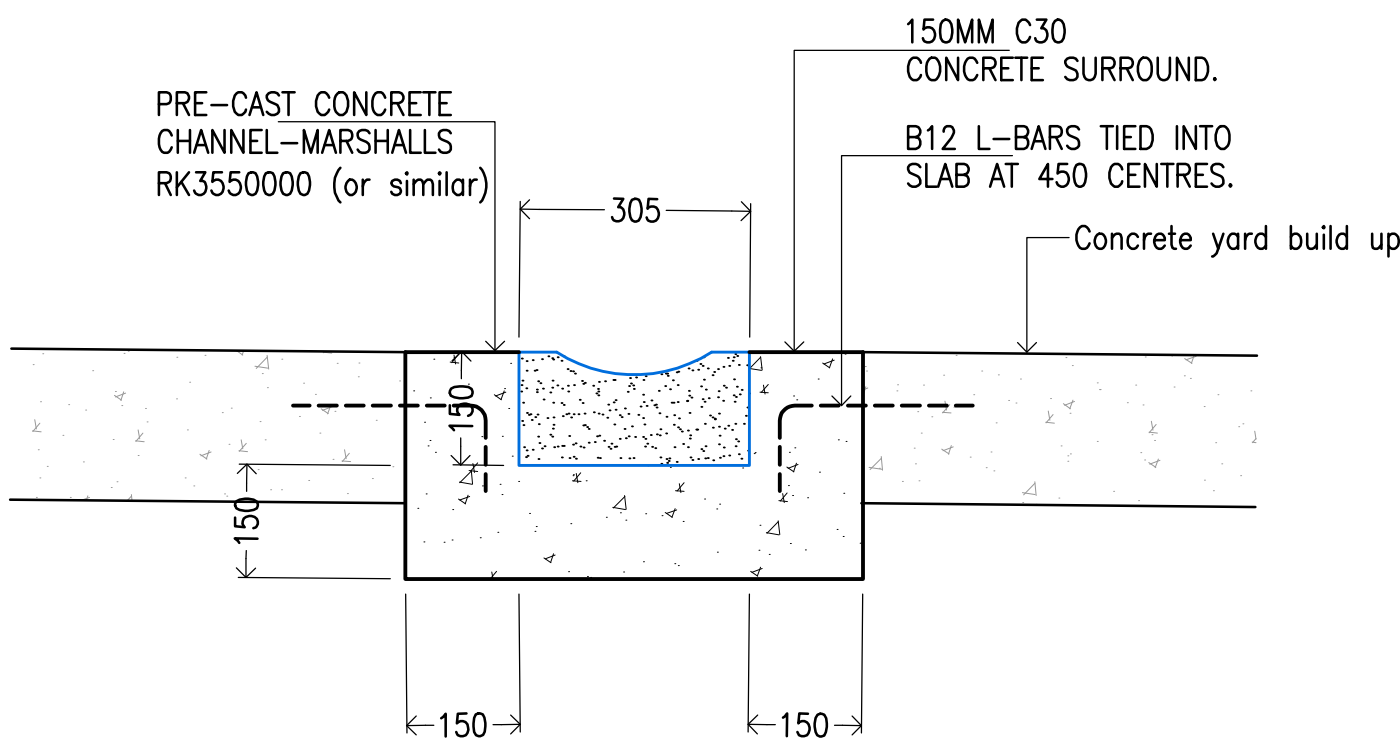
Product code	Flow (l/s)	Peak Flow Rate (l/s)	Drainage area (m 2)	Storage Capacity (Ltrs)	Storage Capacity (Ltrs)	Length (mm)	Diameter (mm)	Access Shaft Diameter (mm)	Base Inlet Invert (mm)	Base to Outlet Invert (mm)	Standard Fall Across (mm)	Min Inlet Invert (mm)	Standard Pipework Diameter (mm)
NSBE030	30	300	16670	3000	450	4285	1420	750	1680	1580	100	700	450



TYPICAL ATTENUATION TANK DETAIL
1:50



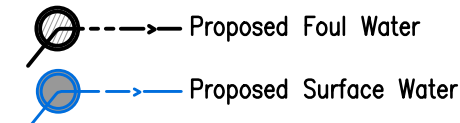
TYPICAL PETROL INTERCEPTOR DETAIL
1:25



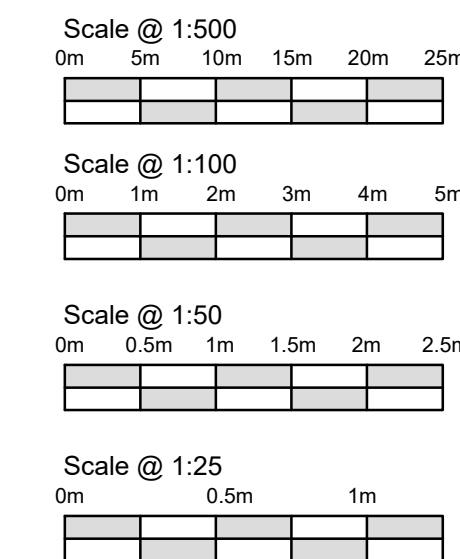
PRE-CAST CONCRETE CHANNEL DETAIL

GENERAL NOTES:

- This drawing is copyright (C).
- This drawing is to be read in conjunction with all relevant drawings and specifications.
- This drawing shall not be scaled: use only figured dimensions. All dimensions are shown in millimetres and levels in metres above OS Datum.
- Dimensions and conditions shall be verified on site. Any discrepancies between this drawing and site conditions shall be brought to the attention of the Engineer for resolution prior to placing orders or construction.
- All work shall comply with the Building Regulations and the requirements of the Local Authority, current Codes of practice and British Standards.
- Dimensions indicated thus: *are to be confirmed on site.
- For remainder of notes see drg no.H11930/02.
- Waterproofing details shown are indicative only, Architect to confirm final details.



Setting out dimensions, walls and levels to architects' drawings



Use shallow concrete encased manholes for depths under 450mm

PROPOSED

F	Update to comments	PR	29.04.20	GN	GN
E	Update to comments	PR	16.03.20	GN	GN
D	Submission issue	PR	05.03.20	GN	GN
C	Further works/improvements issue	PR	31.01.20	GN	GN
B	As Built issue	PR	02.10.19	GN	GN
A	Layout adjusted to latest requirements	PR	24.03.17	GN	GN
Rev	Description	By	Date	Ch'd	Auth

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CONSULTING STRUCTURAL AND CIVIL ENGINEERS

Client	QUATTRO				
Project	QUATTRO SITE, SOUTHALL LANE, HAYES, UB2 5XJ				
Title	DRAINAGE SCHEME				
Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised	
A1	As Shown	PR	GN	GN	
Status	Drawing Number	Date	Date	Date	Rev
AB	H11930-01	23.03.17	23.03.17	23.03.17	F