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# Maroubra Consulting Pty Ltd

## Consulting Structural & Civil Engineers

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ACN. 646647378  
ABN 48 646647378

IN REPLY QUOTE: MC/042/cert1

18 August 2021

Mostaghim  
Level 2/17 Federation Road  
Newtown NSW 2042

Attention: Mie Mie Ohn

Dear Mie Mie,

**Re: 65 Beresford Road, Bellevue Hill**

At your request, this office evaluated the impact of the proposed infiltration system on the proposed alterations and additions. We were supplied with architectural drawings prepared by your office, numbered 20017/DA02<sup>A</sup>, DA05<sup>C</sup>, DA06<sup>C</sup>, DA08<sup>C</sup> and DA09<sup>B</sup>.

On our stormwater design drawing MC004-C1B, we have plotted the zone within three metres of the infiltration system. There are only two existing structures that fall within this three metre zone: (i) the corner of the existing retaining wall; and (ii) the corner of the existing southern wall.

During the structural design stage, these walls require local underpinning to ensure they are unaffected by the infiltration system, as well as to enable construction of water tanks. The underpinning should be two metres below the base of the infiltration system.

Elsewhere, the new structure within this zone, including the pool, would need to be supported on piers to a depth of two metres below the base of the infiltration system.

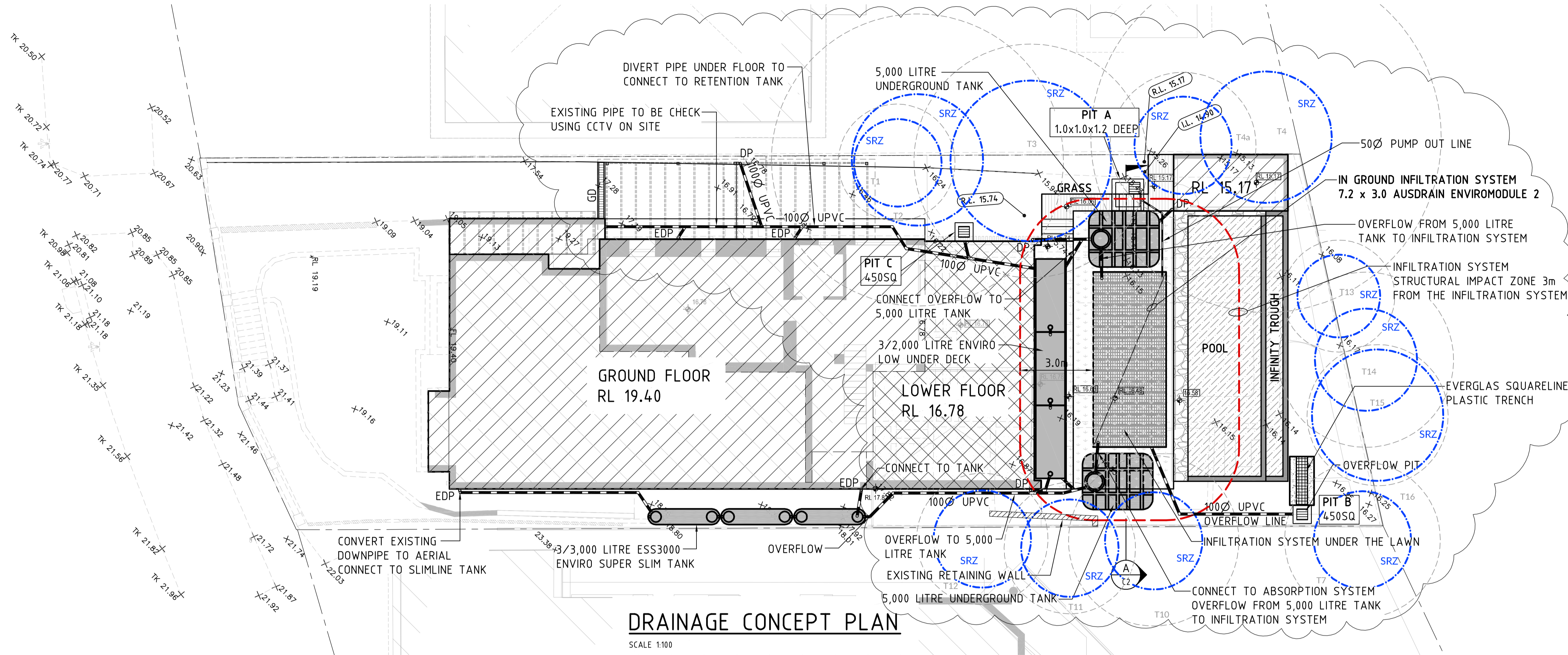
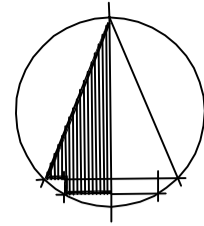
If the above is complied with, we can certify that the final structure will be unaffected by the infiltration system.

If you require further information regarding this matter, please do not hesitate to contact us.

Yours faithfully,  
**MAROUBRA CONSULTING PTY LTD**



**Alan L. Wright B.E. (Hons 1), B.Eng.Sci., M.I.E. Aust., CPEng**  
**NER Registered Civil and Structural 134279**



DRAINAGE CONCEPT PLAN

SCALE 1:100

1. SITE ASSESSMENT  
CURRENT IMPERVIOUS AREA = 385m<sup>2</sup>  
PROPOSED IMPERVIOUS AREA = 372m<sup>2</sup>  
SINCE INCREASE < 40m<sup>2</sup> NO DETENTION REQUIRED.
2. ABSORPTION SYSTEM  
ABSORPTION RATE = 0.28l/sec/m<sup>2</sup> AS PER JK GEOTECHNICS REPORT.  
ABSORPTION STORAGE = 10.75 cum.
3. IN ACCORDANCE WITH WOOLLAHRA COUNCIL REQUIREMENTS A MINIMUM OF 22,500 LITRES OF RAINWATER TANK STORAGE TO BE PROVIDED.
4. GRATED DRAINS TO BE ACO KLASSIK DRAIN - K200. WITH CLASS C GRATE.
5. THE WATER RETENTION SYSTEM TO BE CONNECTED FOR IRRIGATION, TOPPING UP OF THE POOL, LAUNDRY AND TOILET WASHING.
6. ALL NEW FOUNDATIONS WITHIN 3m OF THE INFILTRATION SYSTEM TO BE DESIGN AND CERTIFIED BY STRUCTURAL ENGINEER TO HAVE NO INFLUENCE FROM THE INFILTRATION SYSTEM.
7. ALL TRENCHES AND GRATED DRAINS TO BE HAND DUG UNDER THE DIRECT SUPERVISION OF THE PROJECT ARBORIST.

RAINWATER TANKS

ALL RAINWATER TANKS MUST:

- T1. BE FITTED WITH A FIRST FLUSH DEVICE TO REMOVE SURFACE CONTAMINATION.
- T2. BE ASSEMBLED, INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS AND ANY REQUIREMENTS OF SYDNEY WATER (INCLUDING ANY STAND FOR THE TANK).
- T3. NOT BE INSTALLED OVER OR IMMEDIATELY ADJACENT TO A WATER MAIN OR SEWER MAIN, UNLESS IT IS INSTALLED IN ACCORDANCE WITH ANY REQUIREMENTS OF SYDNEY WATER.
- T4. NOT BE INSTALLED OVER ANY STRUCTURE OR FITTINGS USED BY A PUBLIC AUTHORITY TO MAINTAIN A WATER OR SEWER MAIN.
- T5. BE LOCATED BEHIND THE FRONT ALIGNMENT TO THE STREET OF THE BUILDING TO WHICH THE TANK IS CONNECTED.
- T6. CONTAIN A WARNING LABEL INDICATING THAT THE WATER IS RAINWATER.
- T7. BE FULLY ENCLOSED AND ALL OPENINGS TO THE TANK SCREENED OR FILTERED TO PREVENT ENTRY BY FOREIGN MATTER AND CREATURES.
- T8. BE MAINTAINED AT ALL TIMES SO AS NOT TO CAUSE A NUISANCE WITH RESPECT TO MOSQUITO BREEDING OR OVERLAND FLOW OF WATER.
- T9. NOT BE CONNECTED TO THE MAIN DRINKING WATER SUPPLY OUTLETS.
- T10. WHERE PLUMBING WORK IS TO BE UNDERTAKEN ON OR FOR THE TANK THAT AFFECTS A WATER SUPPLY SERVICE PIPE OF A WATER MAIN, BE UNDERTAKEN:  
(A) WITH THE CONSENT OF SYDNEY WATER  
(B) IN ACCORDANCE WITH THE SYDNEY WATER PLUMBING REQUIREMENTS.  
(C) BY A LICENSED PLUMBER IN ACCORDANCE WITH THE "NSW CODE OF PRACTICE: PLUMBING AND DRAINAGE".
- T11. BE DESIGNED TO DRAW WATER FROM ABOVE THE ANAEROBIC ZONE OF THE TANK.
- T12. BE PROVIDED WITH AN AIR GAP.

PUMPS TO RAINWATER TANKS

PUMPS FOR RAINWATER TANKS MUST:

- P1. BE DESIGNED AND LOCATED SO NOT CAUSE OFFENSIVE NOISE DISTURBANCE TO NEIGHBOURS.
- P2. NOT EXCEED 50BA ABOVE AMBIENT BACKGROUND NOISE LEVEL AT THE NEAREST RESIDENTIAL PROPERTY BOUNDARY.
- P3. BE INSTALLED BY A LICENSED ELECTRICIAN (WHERE AN ELECTRIC PUMP IS TO BE USED).

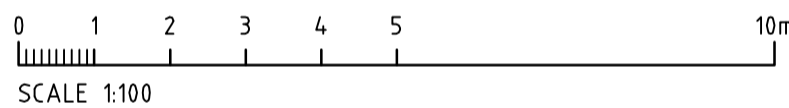
DRAINAGE

- D1. ALL PIPES TO BE CLASS AND TYPE NOTED ON PLAN. ALTERNATIVE OF EQUIVALENT STRENGTH MAY BE SUBSTITUTED WITH APPROVAL OF THIS OFFICE.
- D2. ALL BOX GUTTERS TO HAVE A MINIMUM FALL OF 1 IN 100. ALL EAVES GUTTERS TO HAVE A MINIMUM FALL OF 1 IN 200. ALL INSTALLATION OF GUTTERS AND DOWNPIPES TO BE IN ACCORDANCE WITH AS 2179 & AS 2180 METAL RAINWATER GOODS.
- D3. ALL STORMWATER TO BE INSTALLED IN ACCORDANCE WITH AS3500.3 - 2011, NATIONAL PLUMBING AND DRAINAGE CODE PART 3 - STORMWATER DRAINAGE.
- D4. ALL WORK IS TO COMPLY WITH THE REQUIREMENTS OF WOOLLARA COUNCIL.
- D5. ALL PITS IN ROADWAY AREAS U.N.O. TO HAVE HEAVY CLASS D GRATES AND ALL PITS IN LANDSCAPED AREAS TO HAVE CLASS A GRATES. ALL PITS TO BE HUMES OR EQUIVALENT PRECAST.
- D6. ALL PIPES TO BE LAID TO THE FALLS INDICATED IN TYPE C BEDDING TO AS3725-2007. PIPES TO BE 100 DIA. U.P.V.C AT 1% MIN. U.N.O.
- D7. THE CONTRACTOR IS TO VERIFY THE LOCATION AND RELOCATE AS NECESSARY ALL SERVICES ON SITE, eg. GAS, ELECTRICITY & SEWER. DIAL BEFORE DIG (www.t100.com.au) BEFORE CONSTRUCTION COMMENCES.
- D8. ——— DENOTES FALL DIRECTION OF GUTTER.
- D9. I.L. INDICATES INVERT LEVEL OF PIT.  
R.L. INDICATES DESIGN SURFACE LEVEL.  
E.L. INDICATES EXISTING SURFACE LEVEL.
- D10. ALL LEVELS ARE TO A.H.D.
- D11. ON COMPLETION OF DRAINAGE WORKS THE CONTRACTOR TO SUPPLY TO THE ENGINEER WORK AS EXECUTED DRAWINGS CERTIFIED BY A REGISTERED SURVEYOR.

LEGEND:

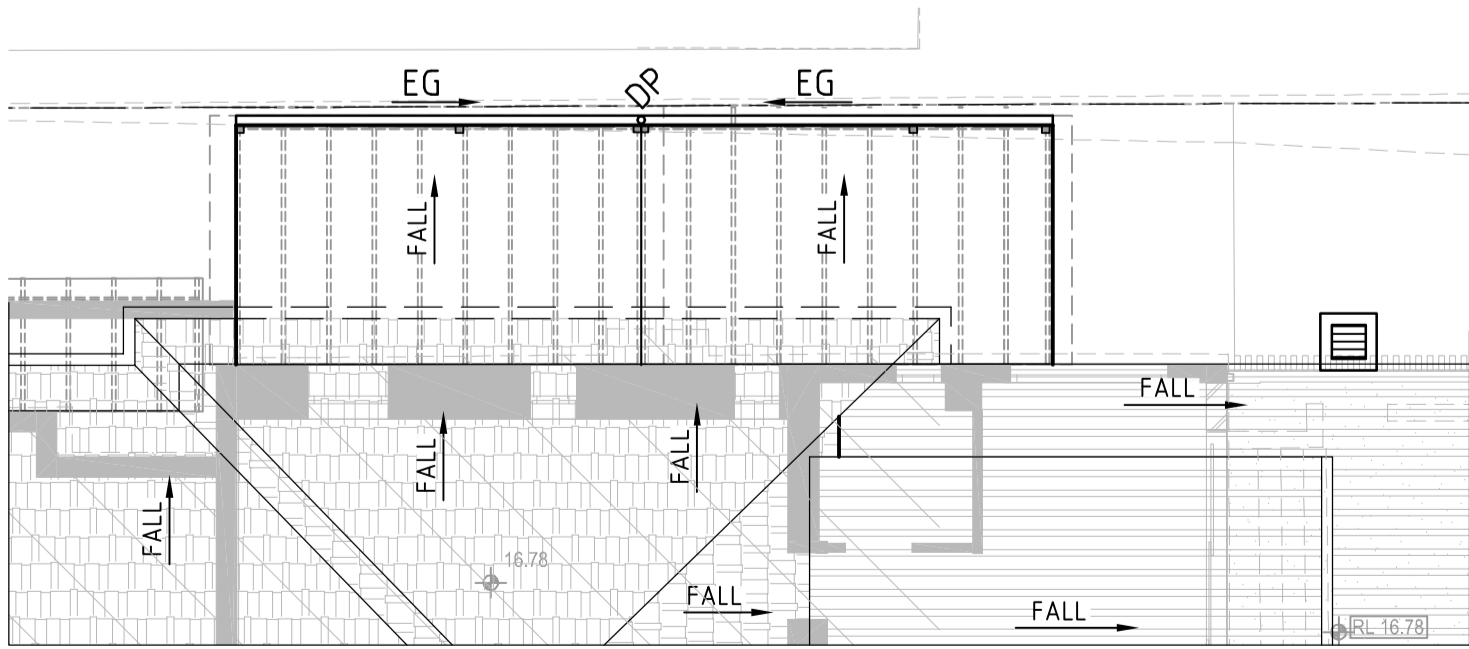
- J.P. DENOTES JUNCTION PIT.  
K.I.P. DENOTES KERB INLET PIT.  
H.E.D.P. DENOTES HEAVY DUTY CAST IRON GRATE.  
S.A.G. DENOTES TYPICAL PIT TO LEVELS SHOWN.
- L.D. DENOTES LIGHT DUTY CAST IRON GRATE.  
M.D. DENOTES MEDIUM DUTY CAST IRON GRATE.  
H.D. DENOTES HEAVY DUTY CAST IRON GRATE.  
C.L. DENOTES CONCRETE LID.  
G.I. DENOTES GALVANISED IRON GRATE.

- SP DENOTES SPREADER.  
K DENOTES KERB. (150mm HIGH).  
E.P. DENOTES EXISTING PIT.  
D.P. DENOTES DOWNPIPE.  
E.G. DENOTES EAVES GUTTER.  
G.D. DENOTES GRATED DRAIN.  
E.L. DENOTES EXISTING LEVEL.  
B.G. DENOTES BOX GUTTER.  
F.W. DENOTES BALCONY DRAIN  
P.W. DENOTES PLANTER BOX DRAIN  
V.G. DENOTES VALLEY GUTTER.



NOTE: THIS DRAWING IS ISSUED FOR DEVELOPMENT CONSENT ONLY. IT IS NOT FOR CONSTRUCTION FULL CONSTRUCTION DOCUMENTATION WILL BE ISSUED FOR CONSTRUCTION CERTIFICATE.

REFER DRAWING SHEET C2 FOR DRAINAGE SECTIONS



CARPORT ROOF PLAN

SCALE 1:100

D	20-08-2021	LOCATION OF TREE SRZ	AM	
C	18-08-2021	REISSUED FOR PRELIMINARY	AM	
B	17-08-2021	ISSUED FOR PRELIMINARY	AM	
A	26-02-2021	ISSUED FOR D.A.	AM	
ISSUE	DATE	AMENDMENT	BY	CHKD

PROJECT  
65 BERESFORD RD BELLEVUE HILL

CLIENT  
ALEX THORPE

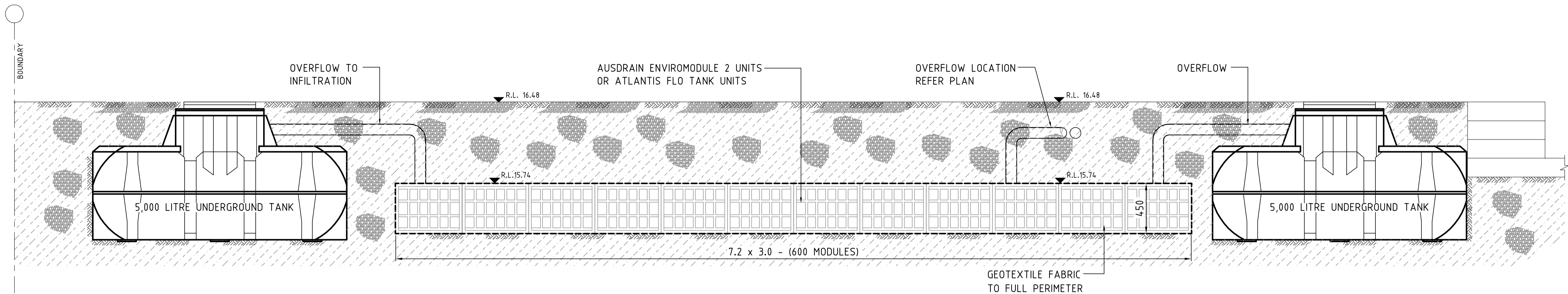
DETAILS  
DRAINAGE CONCEPT PLAN

DESIGNED A.L.W.	CHECKED	DRAWN A.M.	DATE FEBRUARY 2021
APPROVED		SCALE 1:100	SHEET A1
SHEET C1	OF	PROJECT No.	MC-004

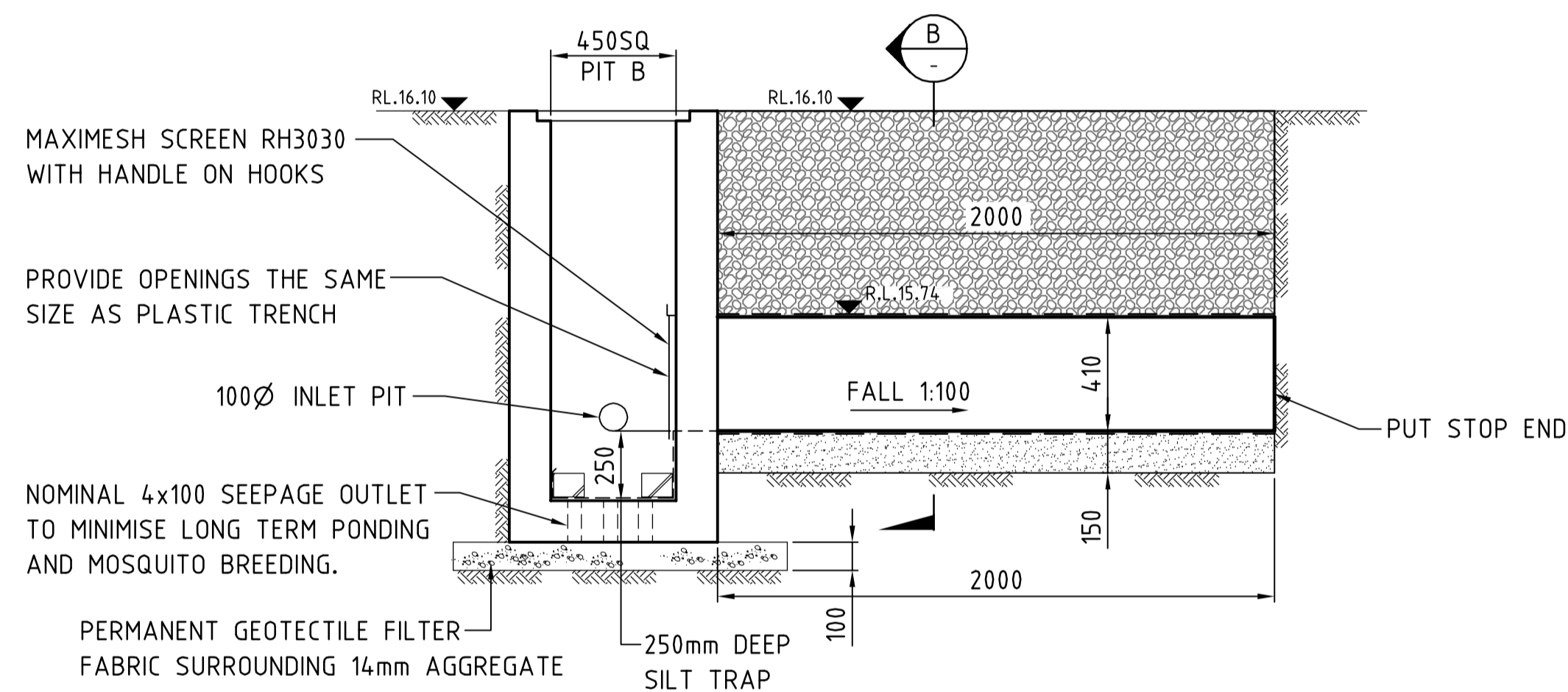
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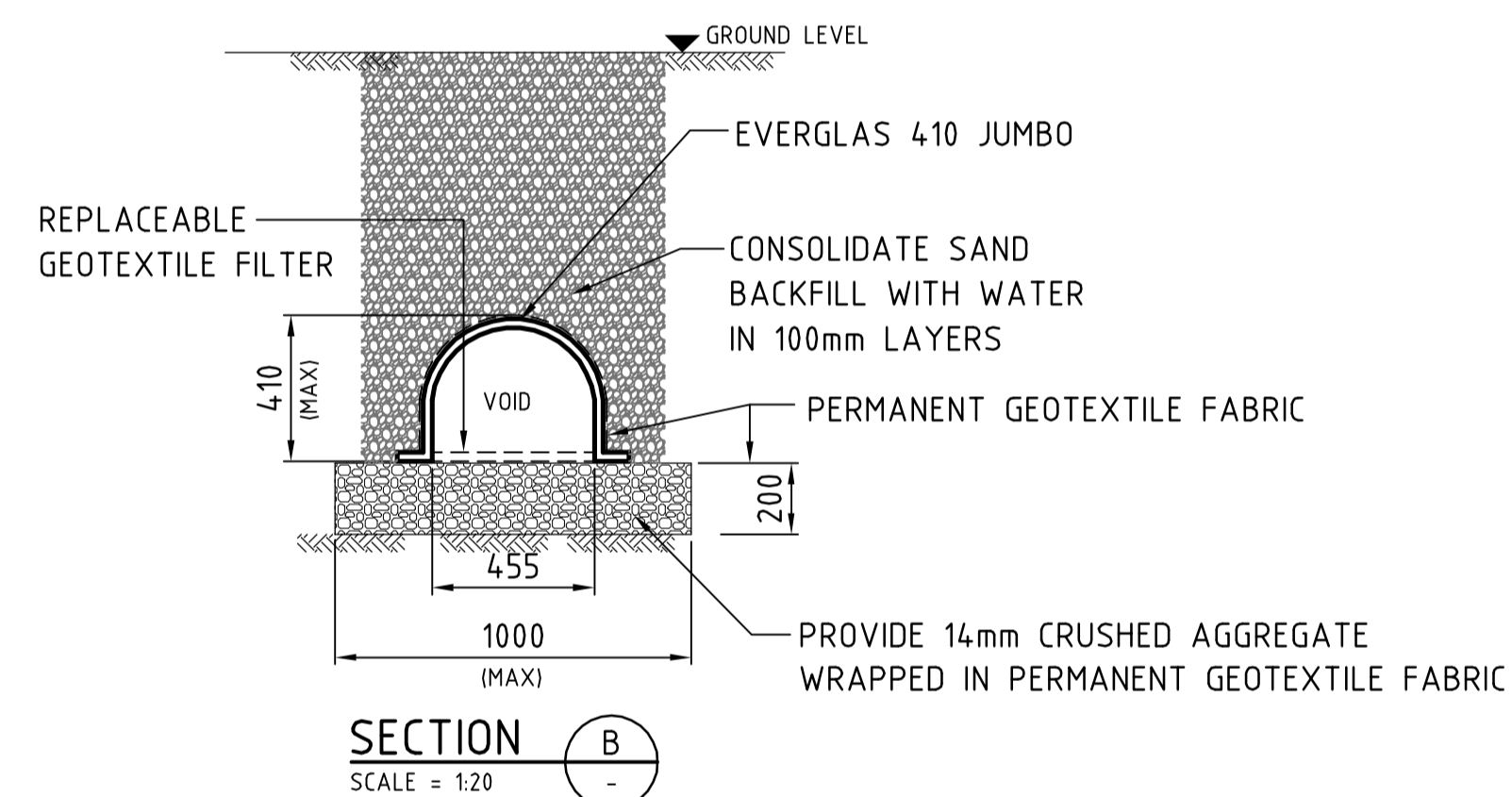




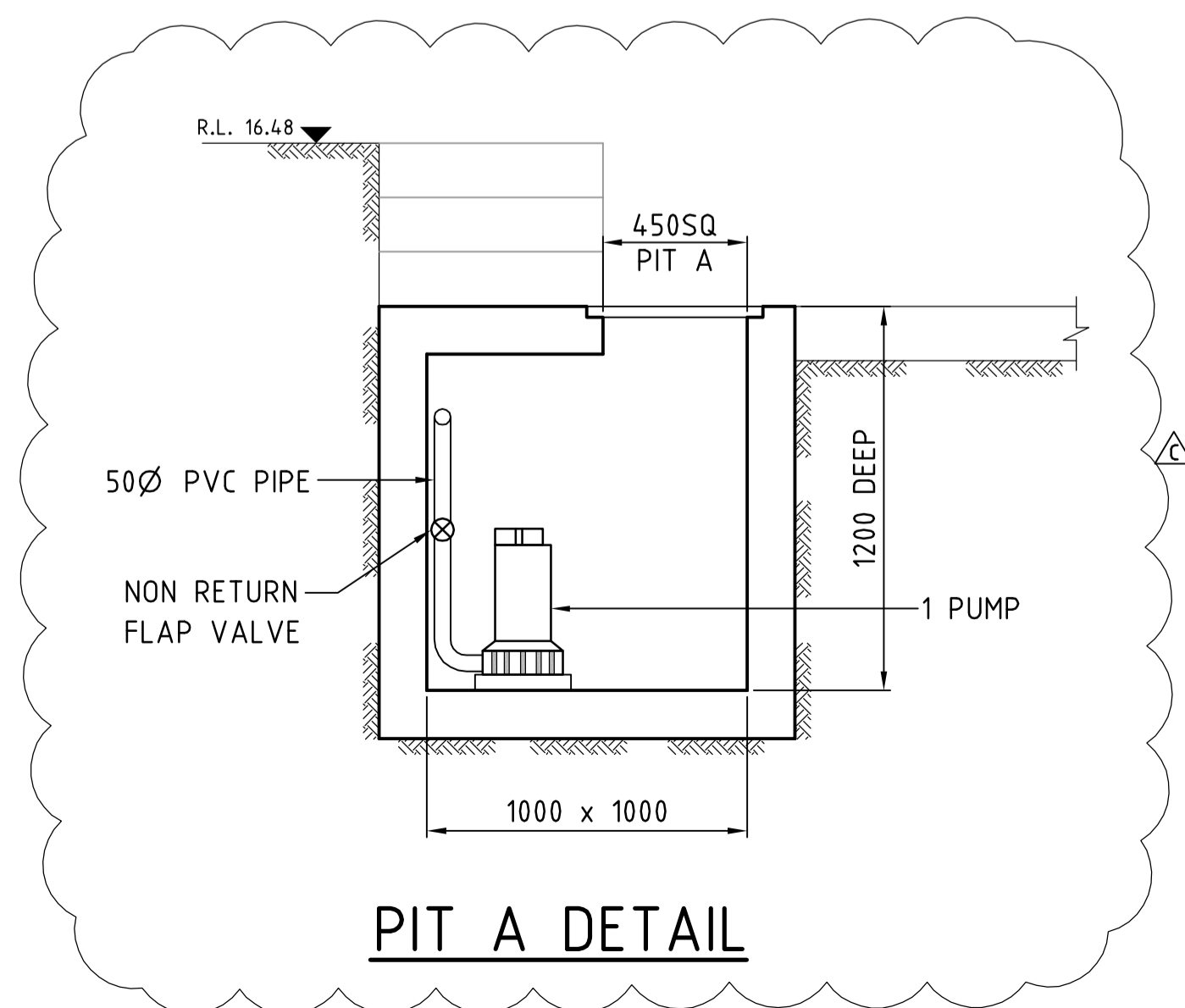
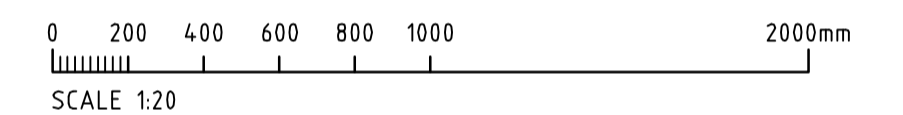
SECTION A  
SCALE = 1:20 C1



PIT B DETAIL



SECTION B  
SCALE = 1:20



PIT A DETAIL

C	20-08-2021	REISSUED FOR PRELIMINARY	AM	
B	17-08-2021	ISSUED FOR PRELIMINARY	AM	
A	26-02-2021	ISSUED FOR D.A.	AM	
ISSUE	DATE	AMENDMENT	BY	CHKD

PROJECT  
65 BERESFORD RD BELLEVUE HILL

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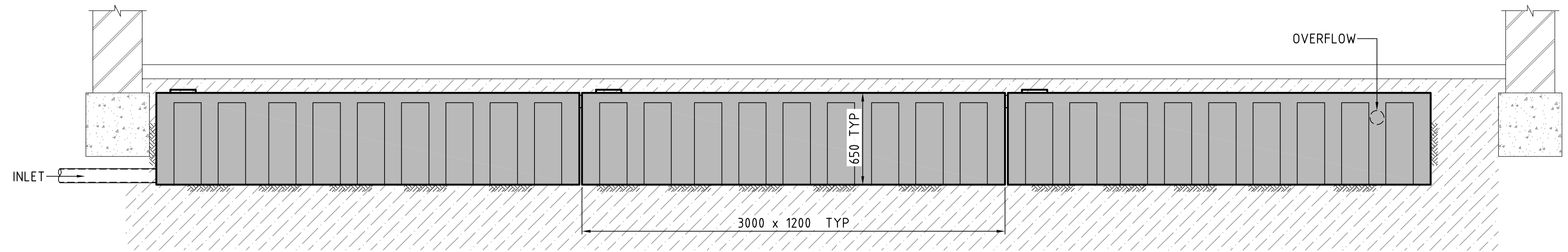
DETAILS  
DRAINAGE SECTIONS

DESIGNED A.L.W.	CHECKED	DRAWN A.M.	DATE FEBRUARY 2021
APPROVED		SCALE 1:20	SHEET A1
SHEET C2	OF C	PROJECT No. MC-004	

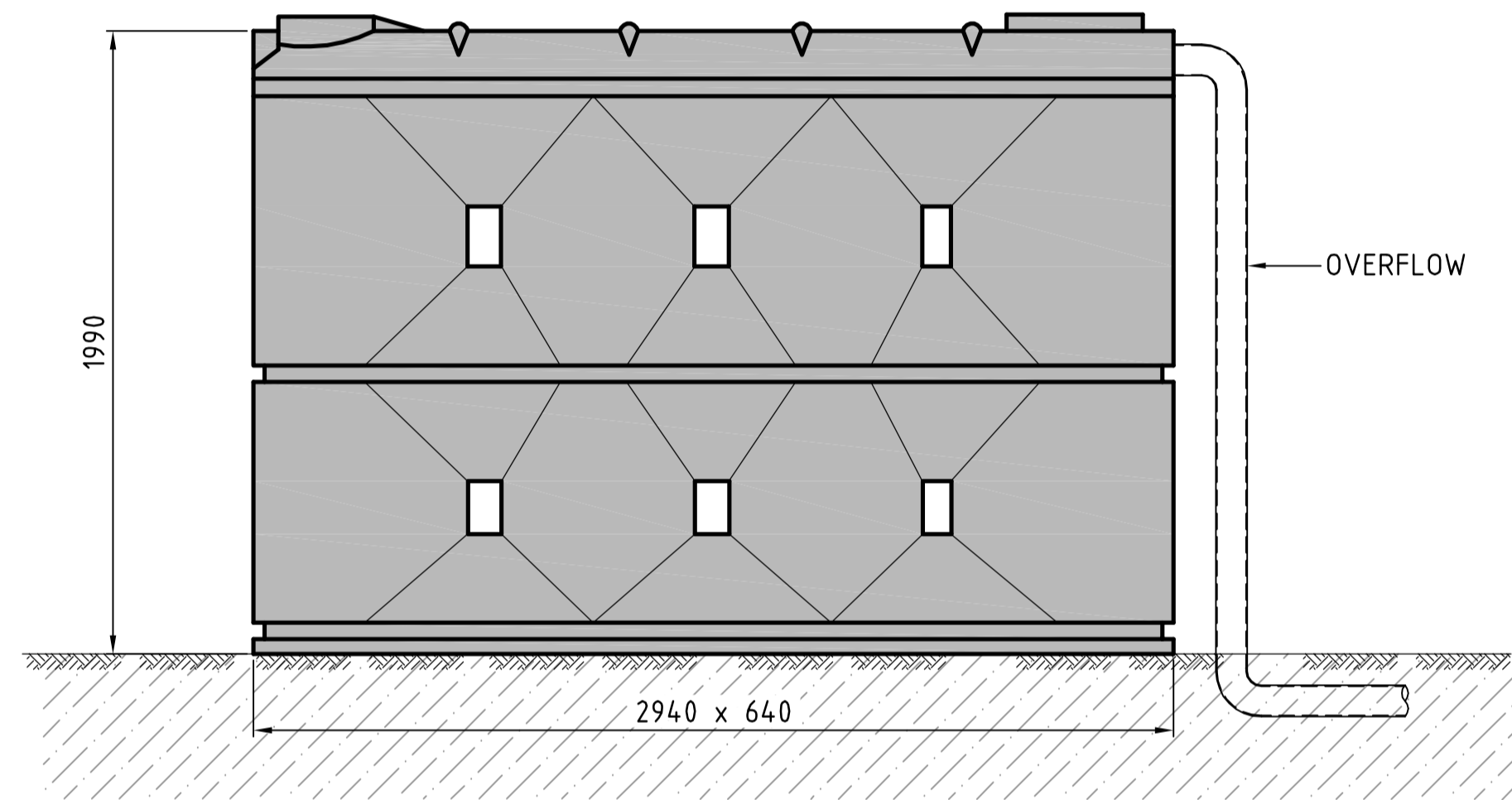
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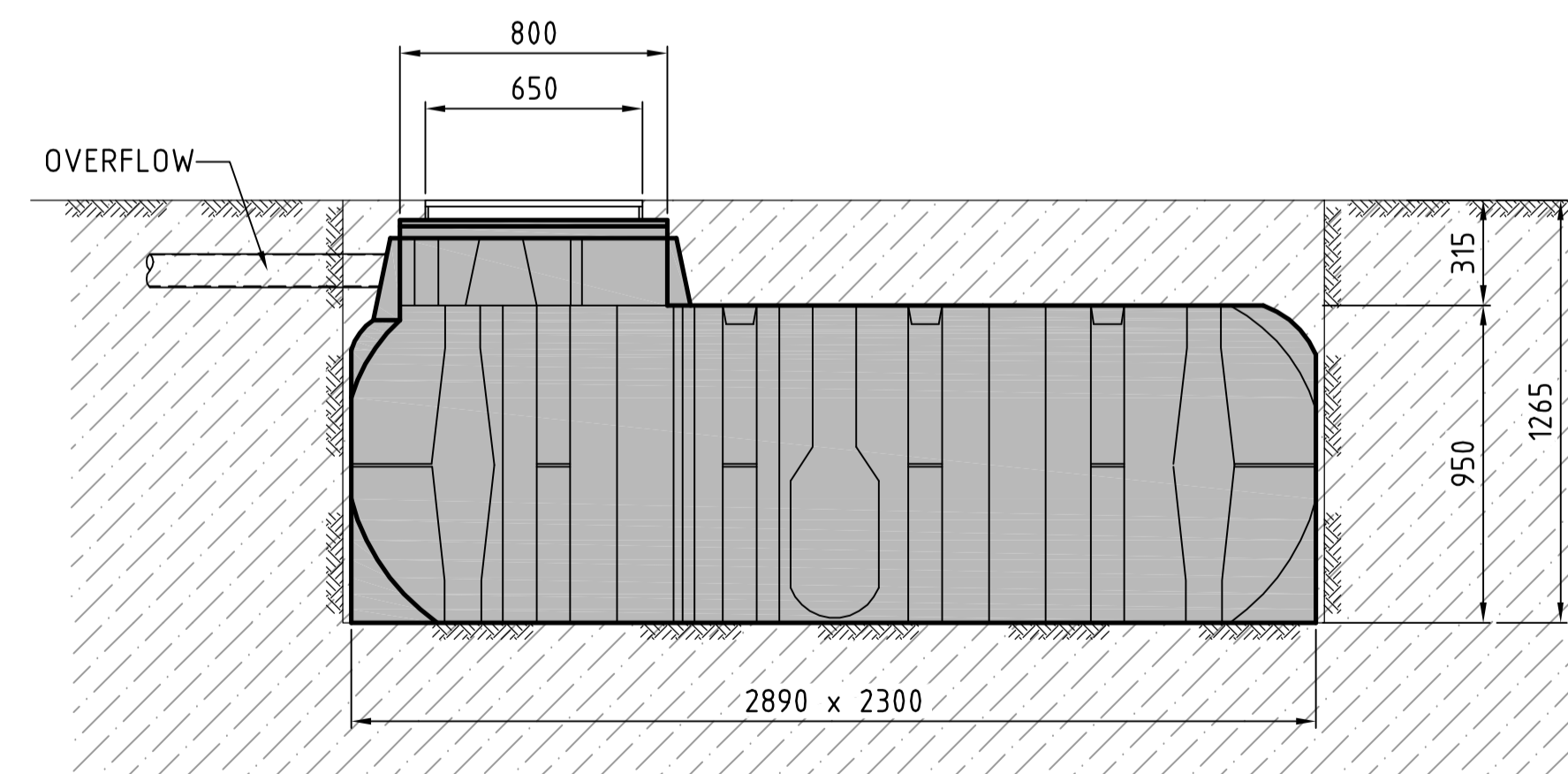




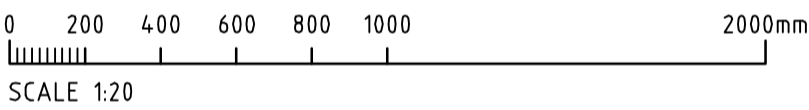
**3/2,000 LITRE ENVIRO LOW UNDERDECK**  
REFER DRAWING SHEET C1



**3/3,000 LITRE ESS3000 ENVIRO SUPER SLIM TANK**  
REFER DRAWING SHEET C1



**2/5,000 LITRE UNDERGROUND TANK**  
REFER DRAWING SHEET C1



A	26-02-2021	ISSUED FOR D.A.		AM	
ISSUE	DATE	AMENDMENT		BY	CHKD

PROJECT  
65 BERESFORD RD BELLEVUE HILL

CLIENT  
ALEX THORPE

DETAILS  
TANKS DIAGRAMS DETAILS

DESIGNED A.L.W.	CHECKED	DRAWN A.M.	DATE FEBRUARY 2021
APPROVED		SCALE 1:20	SHEET A1
SHEET C3	OF A	PROJECT No.	MC-004

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