

Appendix H

Graf Design Drawings

THIS DOCUMENT IS SUPPLIED IN STRICT CONFIDENCE AND MUST NOT BE LENT, REPRODUCED OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF GRAF UK LIMITED

DO NOT SCALE - IF IN DOUBT ASK

NOTES:-

1. Proposed Graf UK Ltd Layout.
2. All dimensions in mm unless otherwise stated.
3. All temporary and enabling works by others.
4. Membrane specification 1.0mm LLDPE, density 0.939g/cm³.
5. Geotextile specification - SNW40, density 300 g/m².
6. All crates installed with inspection running left to right unless otherwise indicated thus
7. EP = Crates requiring End Plates.
8. This design take in to account ground water level present. Refer to note on drawing for Max Level of Groundwater.
9. The attenuation tank must be vented to a suitable location above ground and it is recommended to have one Ø110mm vent pipe for every 7,500m² of impermeable catchment area.

Tank Size:

19.2m(24cr) x 2.4m(3cr) x 0.68m(2cr) = 31.33m³ (Gross)
@ 96%Void Ratio = 30.08m³ (Net)
Where (Xcr) denotes number of crates per linear dimension

Based on the levels provided on this drawing the proposed tank will be suitable Pedestrian Use Only (No vehicles) in accordance CIRIA guidelines.

FLEX CRATES(402005) = 144nr
FLEX BASE PLATES(402006) = 72nr
FLEX END PLATES(402002) = 4nr (SETS OF 2)
ECOBLOC CONNECTORS(402025) = 234nr
ADAPTOR PLATE (AP-110MM) Ø100mm PIPE = 1nr

Qty cut is rounded up to the next 5m

Membrane	
GTLLDPE-1MM	232m ² = 5.8m x 40m
Geotextile - SNW40	
TERREX-SNW40	200m ² = 4m x 50m
Geotextile - NW9	
TERREX-SNW40	393.75m ² = 5.25m x 75m

C FRAMES REQUIRED

Please check tank level, pipe connections, tank (and excavation) size and volumes and if correct sign below for approval:

Name:

Signature:

Date:

This drawing has been produced from Charles Scott & Partners
Drg No.9418 C002 Rev T Drainage Layout
Drg No.9418 C003 Rev H External Construction Details

P1	PRELIMINARY FOR APPROVAL	AP	10.11.25
REV.	DESCRIPTION	BY	DATE

FOR APPROVAL



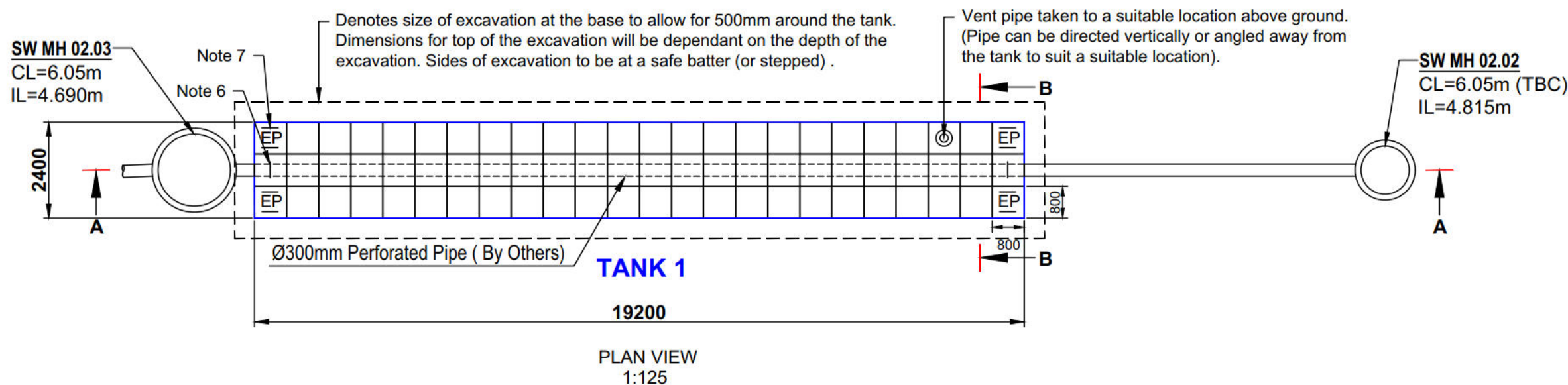
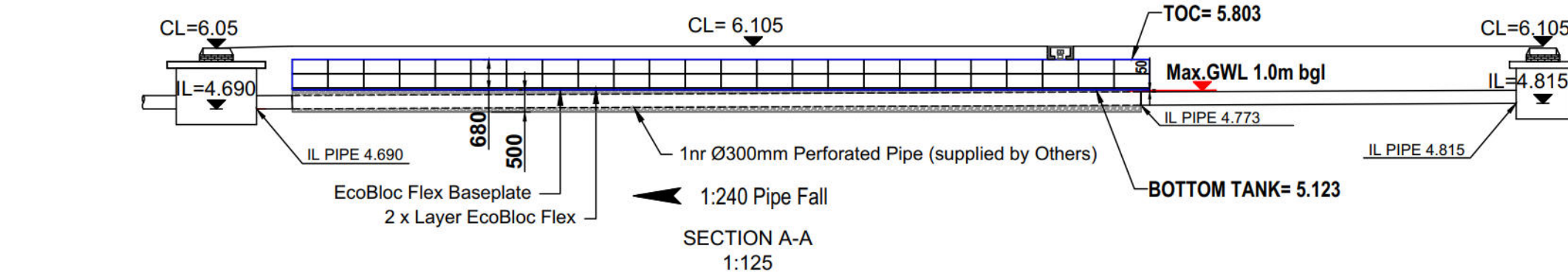
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DRAWN : AP DATE : 10.11.2025
CHECKED : MC SCALE : VARIOUS@A3

PROJECT
SIMPLY UK

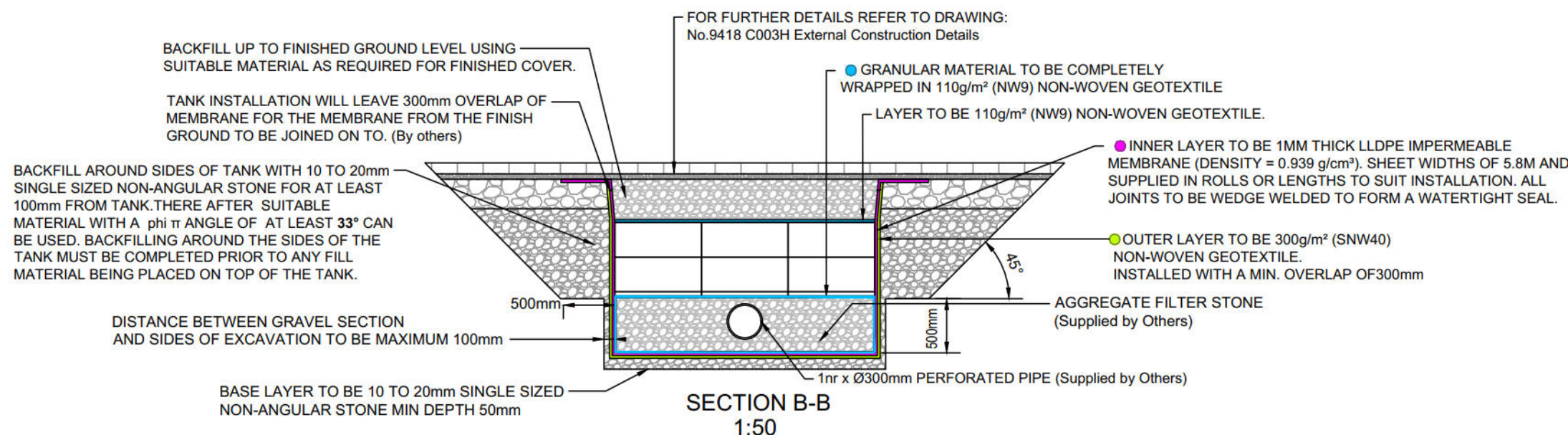
DESCRIPTION
ATTENUATION TANK 1
using GRAF ECOBLOC FLEX

DRAWING No. **Simply UK_001_** REV. **P1**



The location and levels of the manholes are shown indicatively and are for reference only, for full details please refer to Drg No.9418 C002 Rev T Drainage Layout

NOTE: EXCAVATION TO EXCEED TANK SIZE BY 500MM ON ALL SIDES TO ALLOW FOR ACCESS



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NOTES:-

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4. Membrane specification 1.0mm LLDPE, density 0.939g/cm³.
5. Geotextile specification - SNW40, density 300 g/m².
6. All crates installed with inspection running left to right unless otherwise indicated thus
7. EP = Crates requiring End Plates.
8. This design take in to account ground water level present. Refer to note on drawing for Max Level of Groundwater.
9. The attenuation tank must be vented to a suitable location above ground and it is recommended to have one Ø110mm vent pipe for every 7,500m² of impermeable catchment area.

Tank Size:

21.6m(27cr) x 3.2m(4cr) x 0.68m(2cr) = 47.00m³ (Gross)
@ 96%Void Ratio = 45.12m³ (Net)
Where (Xcr) denotes number of crates per linear dimension

Based on the levels provided on this drawing the proposed tank will be suitable Pedestrian Use Only (No vehicles) in accordance CIRIA guidelines.

FLEX CRATES(402005) = 216nr
FLEX BASE PLATES(402006) = 108nr
FLEX END PLATES(402002) = 4nr (SETS OF 2)
ECOBLOC CONNECTORS(402025) = 370nr
ADAPTOR PLATE (AP-110MM) Ø100mm PIPE = 1nr

Qty cut is rounded up to the next 5m

Membrane	
GTLLDPE-1MM	232m ² = 5.8m x 40m
Geotextile - SNW40	
TERREX-SNW40	220m ² = 4m x 55m
Geotextile - NW9	
TERREX-SNW40	446.25m ² = 5.25m x 85m

C FRAMES REQUIRED

Please check tank level, pipe connections, tank (and excavation) size and volumes and if correct sign below for approval:

Name:

Signature:

Date:

This drawing has been produced from Charles Scott & Partners
Drg No.9418 C002 Rev T Drainage Layout
Drg No.9418 C003 Rev H External Construction Details

P1	PRELIMINARY FOR APPROVAL	AP	10.11.25
REV.	DESCRIPTION	BY	DATE

FOR APPROVAL

GRAF GRAF UK Limited

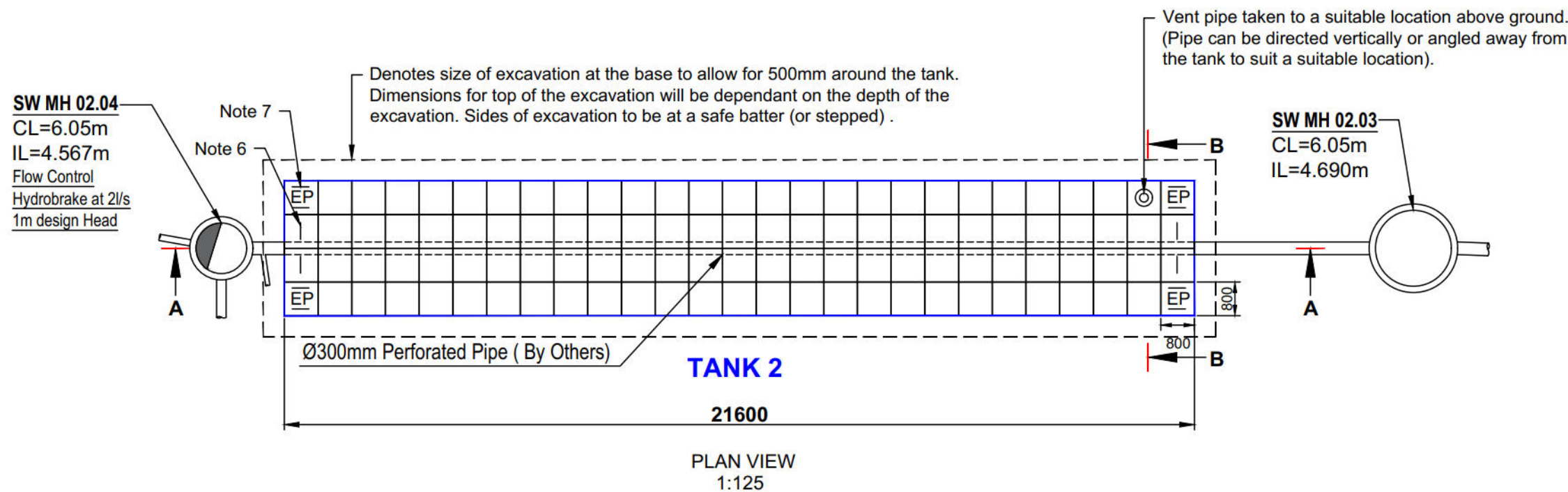
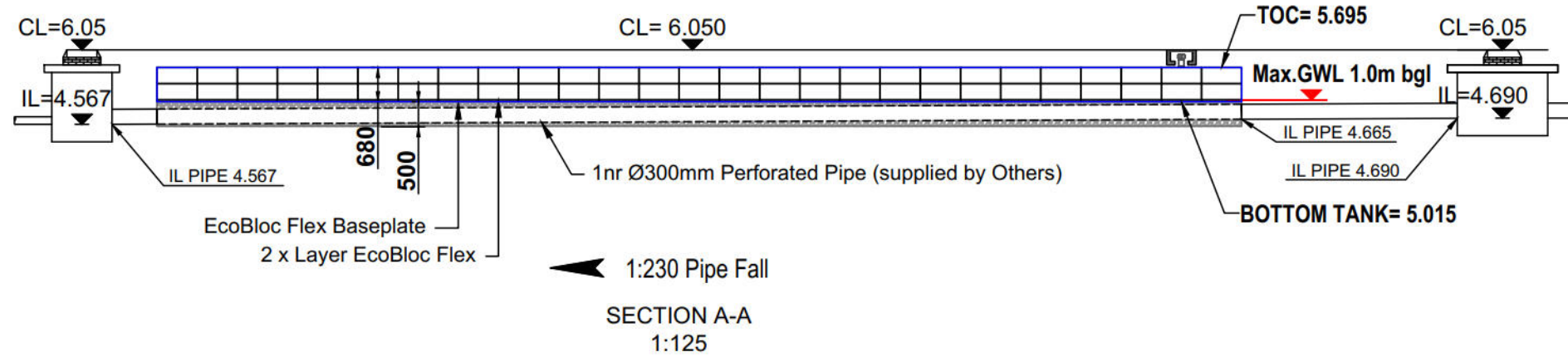
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DRAWN : AP DATE : 10.11.2025
CHECKED : MC SCALE : VARIOUS@A3

PROJECT
SIMPLY UK

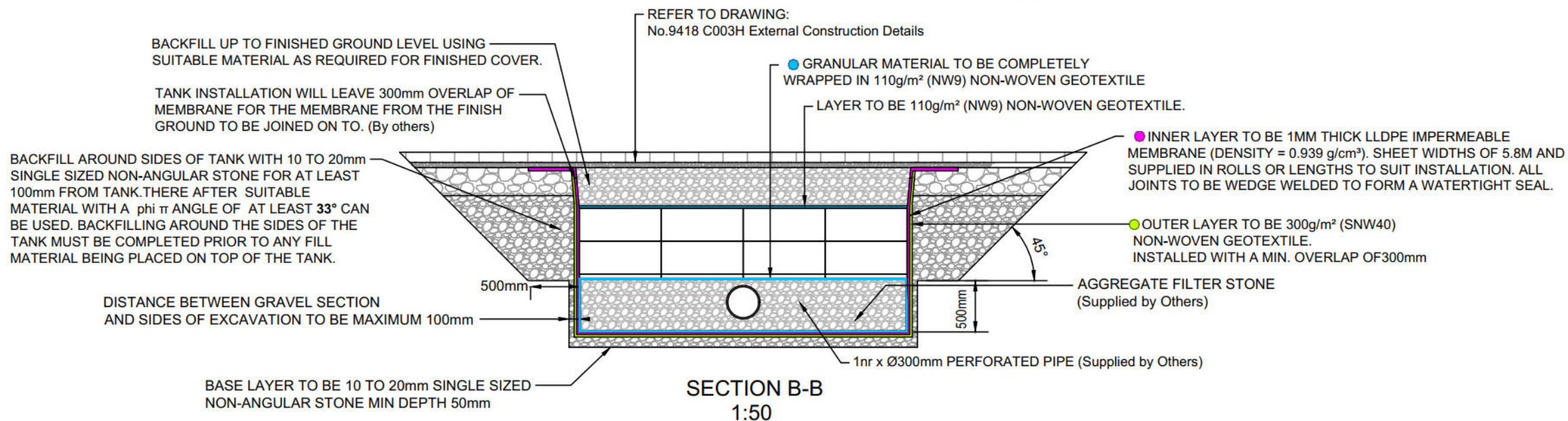
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ATTENUATION TANK 2
using GRAF ECOBLOC FLEX

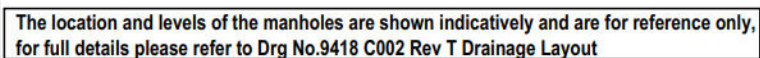
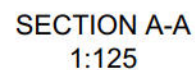
DRAWING No. **Simply UK_002_** REV. **P1**



The location and levels of the manholes are shown indicatively and are for reference only, for full details please refer to Drg No.9418 C002 Rev T Drainage Layout

NOTE: EXCAVATION TO EXCEED TANK SIZE BY 500MM ON ALL SIDES TO ALLOW FOR ACCESS





BACKFILL UP TO FINISHED GROUND LEVEL USING SUITABLE MATERIAL AS REQUIRED FOR FINISHED COVER.

TANK INSTALLATION WILL LEAVE 300mm OVERLAP OF MEMBRANE FOR THE MEMBRANE FROM THE FINISH GROUND TO BE JOINED ON TO. (By others)

BACKFILL AROUND SIDES OF TANK WITH 10 TO 20mm SINGLE SIZED NON-ANGULAR STONE FOR AT LEAST 100mm FROM TANK. THERE AFTER SUITABLE MATERIAL WITH A ϕ π ANGLE OF AT LEAST 33° CAN BE USED. BACKFILLING AROUND THE SIDES OF THE TANK MUST BE COMPLETED PRIOR TO ANY FILL MATERIAL BEING PLACED ON TOP OF THE TANK.

DISTANCE BETWEEN GRAVEL SECTION AND SIDES OF EXCAVATION TO BE MAXIMUM 100mm

500mm

1nr x $\varnothing$ 225mm PERFORATED PIPE (Supplied by Others)

BASE LAYER TO BE 10 TO 20mm SINGLE SIZED NON-ANGULAR STONE MIN DEPTH 50mm

REFER TO DRAWING: No.9418 C003H External Construction Details

GRANULAR MATERIAL TO BE COMPLETELY WRAPPED IN 110g/m² (NW9) NON-WOVEN GEOTEXTILE

LAYER TO BE 110g/m² (NW9) NON-WOVEN GEOTEXTILE.

INNER LAYER TO BE 1MM THICK LLDPE IMPERMEABLE MEMBRANE (DENSITY = 0.939 g/cm³). SHEET WIDTHS OF 5.8M AND SUPPLIED IN ROLLS OR LENGTHS TO SUIT INSTALLATION. ALL JOINTS TO BE WEDGE WELDED TO FORM A WATERTIGHT SEAL.

OUTER LAYER TO BE 300g/m² (SNW40) NON-WOVEN GEOTEXTILE. INSTALLED WITH A MIN. OVERLAP OF 300mm

AGGREGATE FILTER STONE (Supplied by Others)

45°

500mm

SECTION B-B
1:50

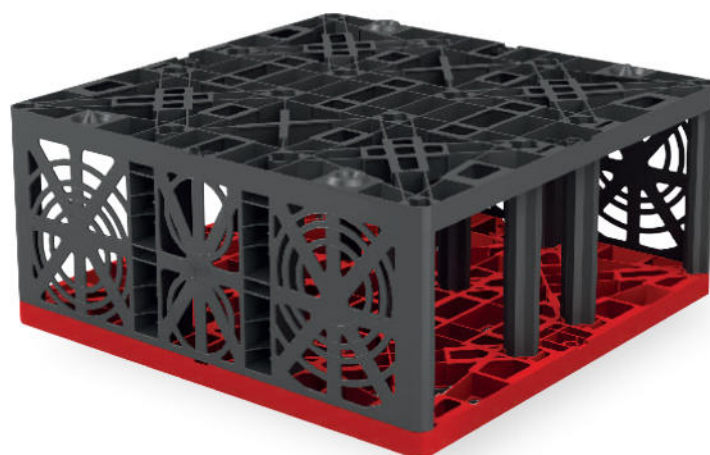
DRAWING No.	REV.
Simply UK 003	P1

Product Specification Sheet

EcoBloc Flex is manufactured from selected recycled material and is designed for deeper applications which may be subject to regular and heavy traffic loadings, e.g. cars and HGV's. EcoBloc Inspect Flex has the ability to be camera inspected and jetted.

Technical Specification

	Crate	Baseplate
Product Code	402205	402206
Colour	Black	Black
Dimensions (mm)	800 x 800 x 320	800 x 800 x 40
Weight	8kg	4kg
Gross Volume	205 litres	25 litres
Net Volume	195 litres	20 litres
Void Ratio	96%	80%
Inspectable	Yes	
Vertical Loading	34 tonnes/m ² (340kN/m ²)	
Lateral Loading	8.2 tonnes/m ² (82kN/m ²)	
BBA Approved	Yes (Certificate 15/5200)	



Maximum depth of installation

Maximum depth of installation - to base of units (m)¹

Typical soil type	Soil weight kN/m ²	Angle of internal friction (degrees) ²	Landscaped areas	Vehicle weight <9 tonnes ³	Vehicle weight <30 tonnes	Vehicle weight <60 tonnes
Over consolidated stiff clay	20	24	2.75	2.50	2.25	2.25
Silty sandy clay	19	26	3.00	2.75	2.50	2.50
Loose sand and gravel	18	30	3.75	3.50	3.25	3.25
Medium dense sand and gravel	19	34	4.25	4.00	3.75	3.75
Dense sand and gravel	20	38	4.75	4.50	4.25	4.25

It is advised that structural design calculations are carried out prior to work commencing. Installation depths and loadings outside of those covered in this table may be permissible depending on site conditions. Contact Graf UK Ltd for more information.

Minimum & maximum cover depths

	Landscaped area	Vehicle weight <3 tonnes ⁴	Vehicle weight <9 tonnes	Vehicle weight <12 tonnes	Vehicle weight <30 tonnes	Vehicle weight <60 tonnes
Minimum cover depth (m)	0.30	0.50	0.70	0.80	0.90	1.10 ⁵
Maximum cover depth (m)	2.75	2.75	2.75	2.75	2.50	2.25

Other vehicle loads are possible. Please contact Graf UK for technical advice.

Notes:

- Without groundwater present. EcoBloc Flex may be used where groundwater is present, contact Graf UK for technical advice.
- The design is very sensitive to small changes in the assumed value of ϕ , therefore, it is recommended that these values are confirmed by a chartered geotechnical engineer.
- Applicable for car parks or other areas trafficked only by cars or LGVs. Infrequent accidental load from heavier vehicles may be possible.

- This category should be used when considering landscaped areas that may be trafficked by ride on mowers.
- Including 200mm concrete slab.

Assumptions made:

- Ground above and to the sides of the tank is horizontal.
- Shear planes or other weaknesses are not present within the structure of the surrounding soil.