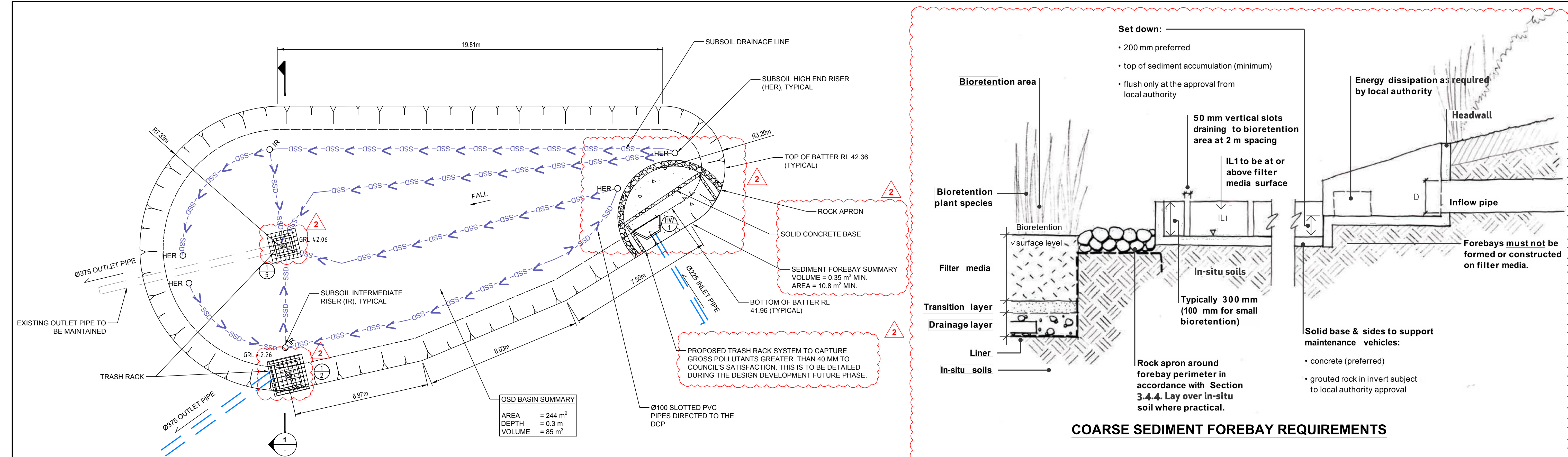


MINIMUM SEDIMENT FOREBAY VOLUME	MINIMUM FOREBAY AREA TO CAPTURING THE TARGETS SEDIMENT SIZE (1 m)	FILTER MEDIA SCOUR VELOCITY CHECK
$V_s = A_c \times R \times L_0 \times F_c$ V_s - VOLUME OF FOREBAY SEDIMENT STORAGE (m³) A_c - CONTRIBUTING CATCHMENT AREA (ha) R - CAPTURE EFFICIENCY (0.8 RECOMMENDED) L_0 - SEDIMENT LOADING RATE (m³/ha/year) F_c - DESIRED CLEANOUT FREQUENCY (YEARS) $V_s = 0.71 \times 0.8 \times 0.6 \times 1 = 0.35 \text{ m}^3$	$R = 1 - (1 + \frac{1}{n} \times \frac{V_s}{Q/A_c})^n$ R - FRACTION OF TARGETS SEDIMENT REMOVED (0.8 RECOMMENDED) V_s - SETTLING VELOCITY OF SEDIMENT (0.1 m/s FOR 1 mm PARTICLES) A_c - MINIMUM FOREBAY AREA FOR SEDIMENT CAPTURE (m²) R - CAPTURE EFFICIENCY (0.8 RECOMMENDED) n - TURBULENCE OR SHORT-CIRCUITING PARAMETR (0.5 RECOMMENDED) $0.8 = 1 - (1 + 1/0.5 \times 0.1/0.09/A_c)^{0.5}$ $A_c = 10.8 \text{ m}^2$	$V = \frac{Q}{W \times D}$ V - VELOCITY OF FLOW OVER FILTER MEDIA SURFACE (m/s) Q - FLOE RATE IN THE DESIGN STORM EVENT (m³/s) W - BIOTRETANTION WIDTH IN THE NARROWEST POINT (m) D - DEPTH OF FLOW (m) MINOR $V = 0.36 / 6.23 \times 0.2 = 0.29 \text{ m/s}$ $V = 0.29 \text{ m/s}$, $< 1 \text{ m/s}$ THEREFORE OK MAJOR $V = 0.5 / 6.23 \times 0.4 = 0.2 \text{ m/s}$ $V = 0.2 \text{ m/s}$, $< 1 \text{ m/s}$ THEREFORE OK

DO NOT SCALE FROM DRAWINGS, CHECK & VERIFY ALL DIMENSIONS & LEVELS BEFORE COMMENCEMENT OF ANY WORK.

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DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

1:0 0 1.0 2.0 3.0 4.0 5.0m
PLAN SCALE 1:100 A1 SHEET

200 0 200 400 600 800 1000mm
PLAN SCALE 1:20 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
1	ISSUE FOR DEVELOPMENT APPLICATION	14/07/23			
2	RE-ISSUED FOR DEVELOPMENT APPLICATION	24/05/24			

CLIENT: **Shoalhaven City Council**

PROJECT: **RESOURCE RECOVERY LEARNING CENTRE - WEST NOWRA**

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Driven by excellence, built on experience.

TITLE: **OSD AND BIOTRETENTION PLAN AND SECTION**

SCALE: AS SHOWN	DRAWN: I.K.	DESIGNED: R.X.	CHECKED: J.G.	APPROVED:
JOB No: 7672000	DRAWING No: C6.41	ISSUE: 2		
DATE: JULY 2023	STATUS: DEVELOPMENT APPLICATION			

Work: 7672000_TB_A1.dwg
User: K. Smith
Plot Date: 24/05/2024 12:35:50
Plot File: T:\7672000\Drawings\AutoCAD\Drawings\Civil\2024\1 OSD Plan and Section.dwg

PRELIMINARY - NOT FOR CONSTRUCTION