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6 May 2024

Logos

Attention: Mr. Louis Towning
Level 46, Gateway
1 Macquarie Street
SYDNEY NSW 2000

Dear Sir,

Re: Response to Submissions (RtS) - SSD- 36138263
Augusta Street Warehouse and Distribution Centre
Augusta Street, Blacktown, NSW

In response to the letter from Blacktown City Council dated 12 April 2024 referenced MC-23-00005, we provide the following responses to the Civil Engineering and Drainage matters.

	Item & Response	
No	DRAINAGE MATTERS BCC Comment	
13	Supporting documents shall be provided in electric format for assessment:	CRC Response
(a)	The OSD spreadsheet shall be provided	The electronic excel spreadsheets have been shared with the applicant to be made available to BCC
(b)	MUSIC model shall be provided to confirm the reduction target and the non-potable reuse target are achieved.	The electronic version of the MUSIC model has been shared with the applicant to be made available to BCC

(c)	DRAINS model to confirm the drainage design on both internal and external of the site.	The electronic version of the DRAINS model has been shared with the applicant to be made available to BCC
(d)	Tuflow model to show the waterway in both pre and post development.	The electronic version of the Tuflow model has been shared with the applicant to be made available to BCC
14	The submitted Civil Work package, Costin Roe Consulting, Job Number C013904.03, Revision E and dated 06/03/24 shall be amended:	CRC Response
a)	the details of the proposed OSD and storm filter tank shall be provided including details of the control pit, orifice level weir level and cross-section of the tanks etc in both warehouse 1, 2 & 3. The required details can be found in Council's Engineering Guideline for Development and WSUD Standard drawing A(BS)175M.	Reference should be made to drawing CO13904.03-SSDA461, that formed part of the latest submission, for a summary of the proposed OSD and storm filter tanks, control pits, orifice level weir levels, designed in accordance with Council's Engineering Guideline for Development and WSUD Standards.
b)	the details of the proposed bioretention & detention basin shall be provided including details of the control pit, orifice level weir level and cross-section of the basins etc in both warehouse 3, 4, 5 & 6. The required details can be found in Council's Engineering Guideline for Development and WSUD Standard drawing A(BS)175M. Secondly, the longitude section of the access track shall be provided to prove the gradient is not more the 10%.	Reference should be made to drawing CO13904.03-SSDA465, that formed part of the latest submission, for a summary of the proposed bioretention & detention basin, control pits, orifice level weir levels, designed in accordance with Council's Engineering Guideline for Development and WSUD Standards. Maintenance access tracks will be designed during the detail design stage. A note is added to all stormwater drainage drawings at basins noting that all access tracks will be designed to have a maximum gradient of 10%.

	Furthermore, the solar access of both basins is uncertain. The consultant shall confirm the basin meet the minimum solar access.	Solar access have been reviewed and response provided in Enclosure 1 to this letter.
c)	The details of the permanent ponds and wetland are insufficient for assessment. More details must be provided.	<u><i>Response</i></u> Reference should be made to drawings SSDA460 to SSDA465 as well as drawings SSDA550 to SDDA553, that formed part of the latest submission, showing additional details and sections through all permanent basins, creeks, watercourse and wetlands. Reference should be made to drawing SSDA466, provided additionally with this RTS response, for more details on the wetlands. Drawings SSDA454 to SSDA458 provide typical bioretention and ephemeral pond details.
d)	All pipeline details were not included in the submitted plan.	<u><i>Response</i></u> Reference should be made to drawings SSDA400 to SSDA415, that formed part of the latest submission, for proposed pipeline layout and some pipe sizes, and further reference should be made to the DRAINS model provided for pipe inverts and details.

This letter is provided by Costin Roe Consulting Pty Ltd. Please contact the undersigned if clarification of any of the above items are required.

Yours faithfully,

COSTIN ROE CONSULTING PTY LTD



LOURENS DE VILLIERS

Senior Design Engineer

Encl. 1. Solar Access Response

ENCLOSURE 1

Solar Access Response

Solar access to the bioretention basins has been reviewed with consideration to section 11.8.4 of Blacktown City Council's *WSUD developer handbook* and the findings have been summarised below. Minimum solar access achieved. An additional review of the architectural shadow study (referenced 220207-DA-003, dated Aug 2023) have been conducted and shows that only the proposed warehouse on Lot 5 cast a shadow for a short period of time over basin 3.

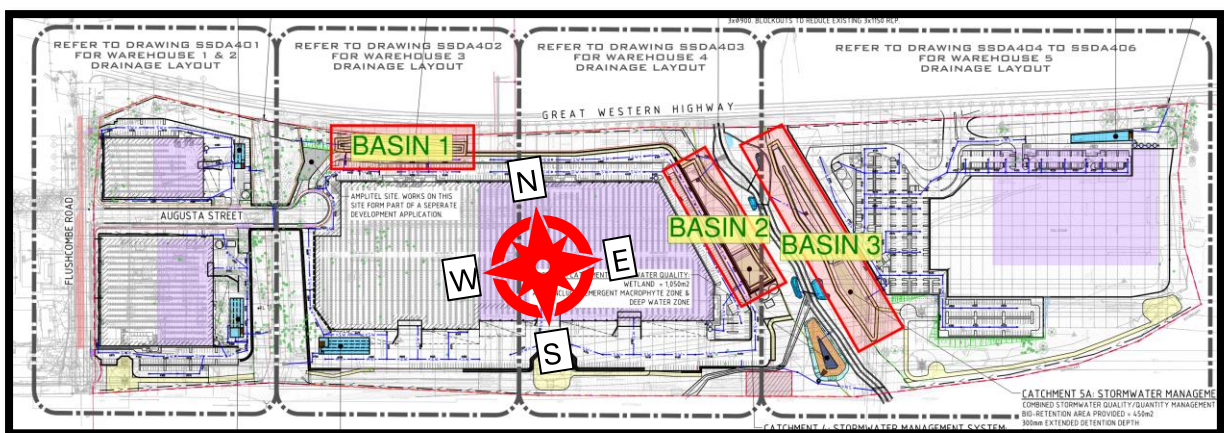


Figure 1 – Key Plan showing Basins 1 to 3.

BASIN 1

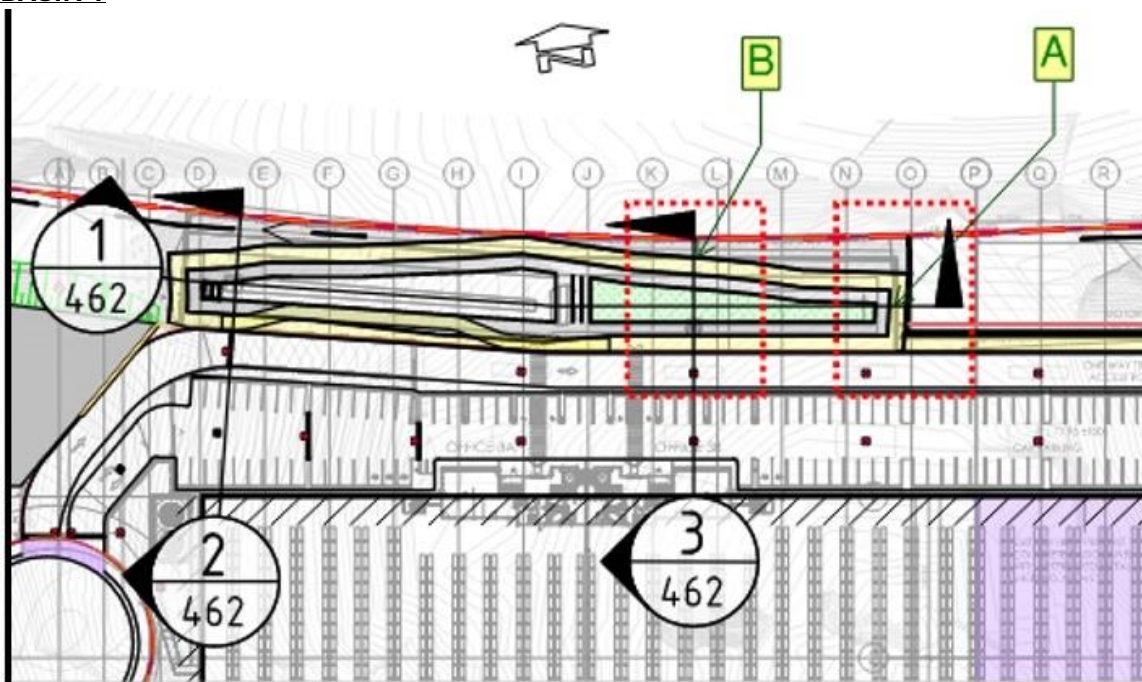


Figure 2 – Basin 1 and areas where solar access is reviewed in section.

Section A:

Minimum Solar Access considered to be achievable. Retaining wall heights to be confirmed during detail design stage. Estimated 1 in 1.5 mid-winter shadow line considered to be clear of bioretention basins based on the concept retaining wall heights.

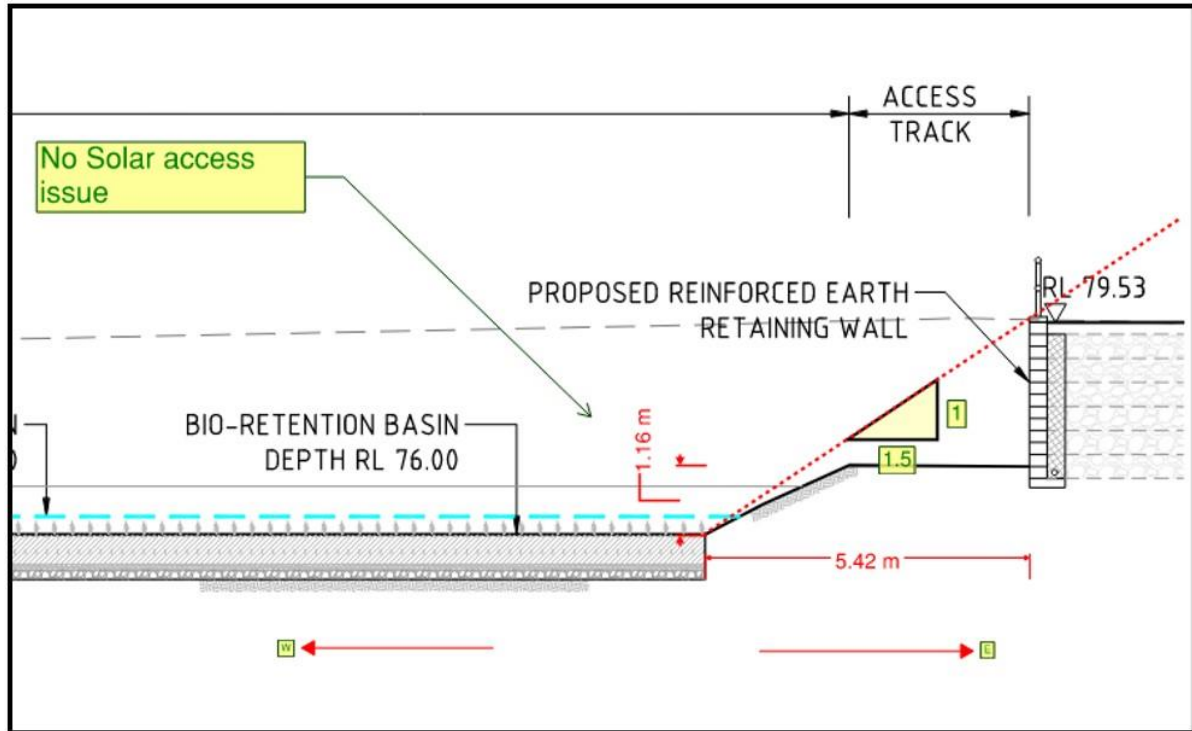


Figure 3 – Section A through Basin 1

Section B:

Minimum Solar Access considered to be achievable, no high structures towards the north of the proposed bioretention along this section.

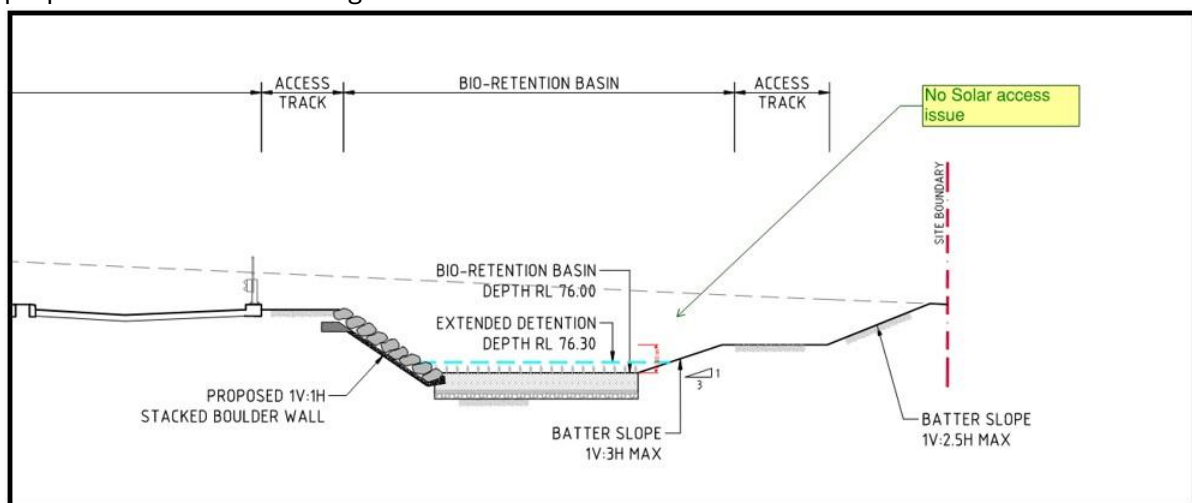


Figure 4 – Section B through Basin 1

BASIN 2 & 3:

An additional review of the architectural shadow study (referenced 220207-DA-003, dated Aug 2023) have been conducted. Bioretention Basin number 3 experience shadowing from warehouse 5 between 9am and 12pm. Refer to figure

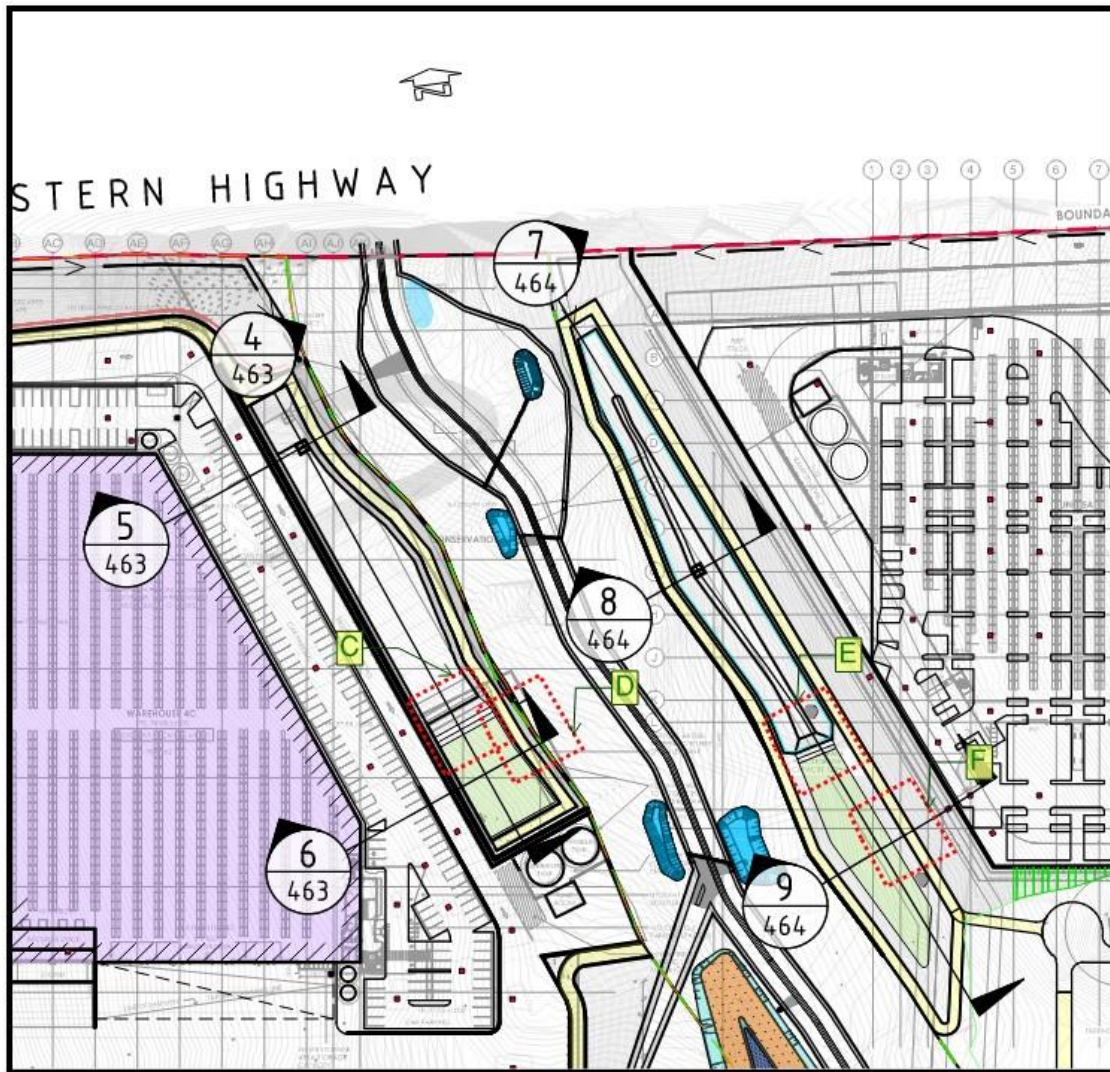


Figure 5 – Basin 2 & 3 and areas where solar access is reviewed in section.



Figure 6 – Shadow Study Key Plan and impact shown in bioretention basin 3
(Reference - 220207-DA-003, dated Aug 2023)

Section C:

Minimum Solar Access considered to be achievable, no high structures towards the north of the proposed bioretention along this section.

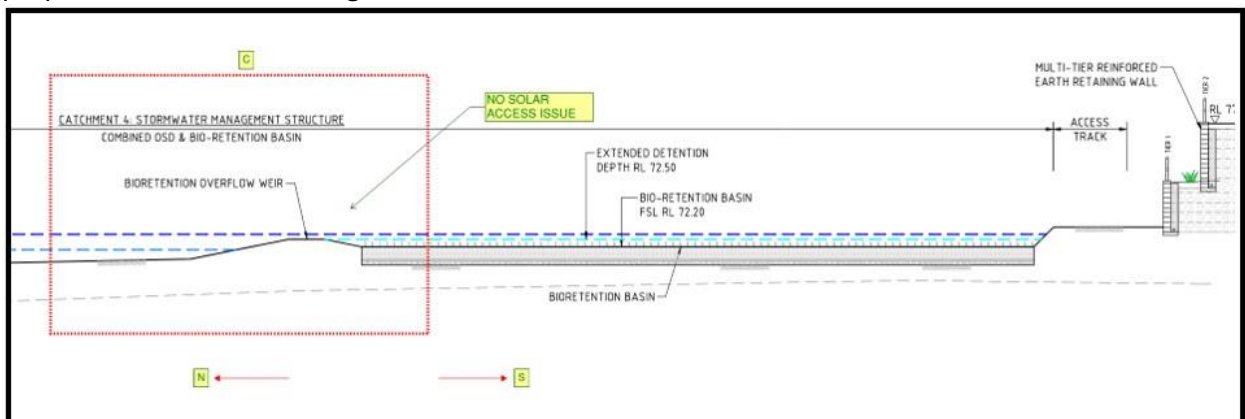


Figure 7 – Section C through Basin 2

Section D:

Minimum Solar Access considered to be achievable, no high structures towards the north of the proposed bioretention along this section.

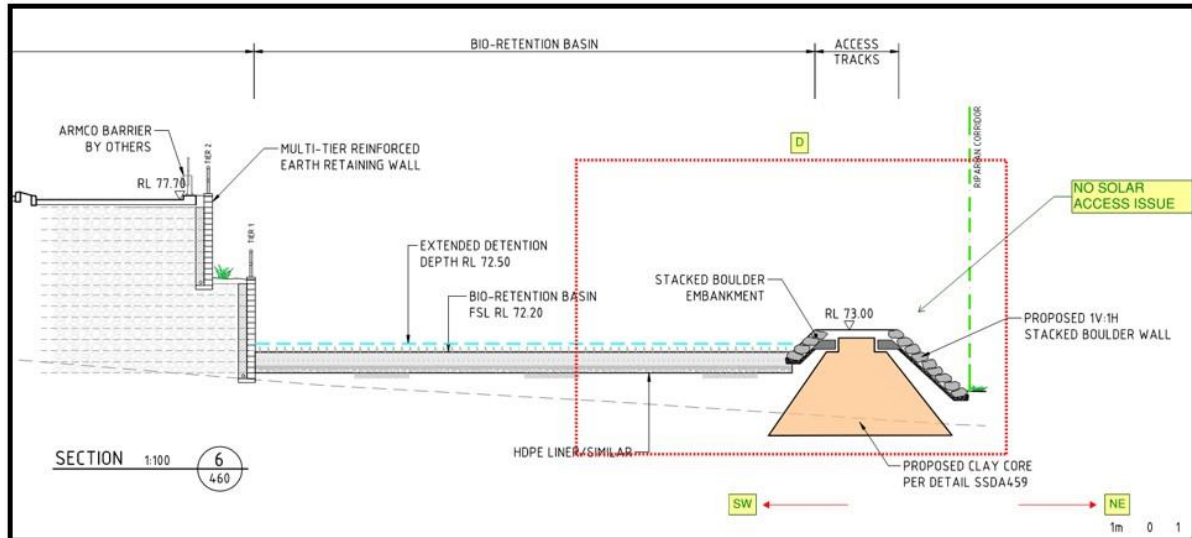


Figure 8 – Section D through Basin 2

Section E:

Minimum Solar Access considered to be achievable.

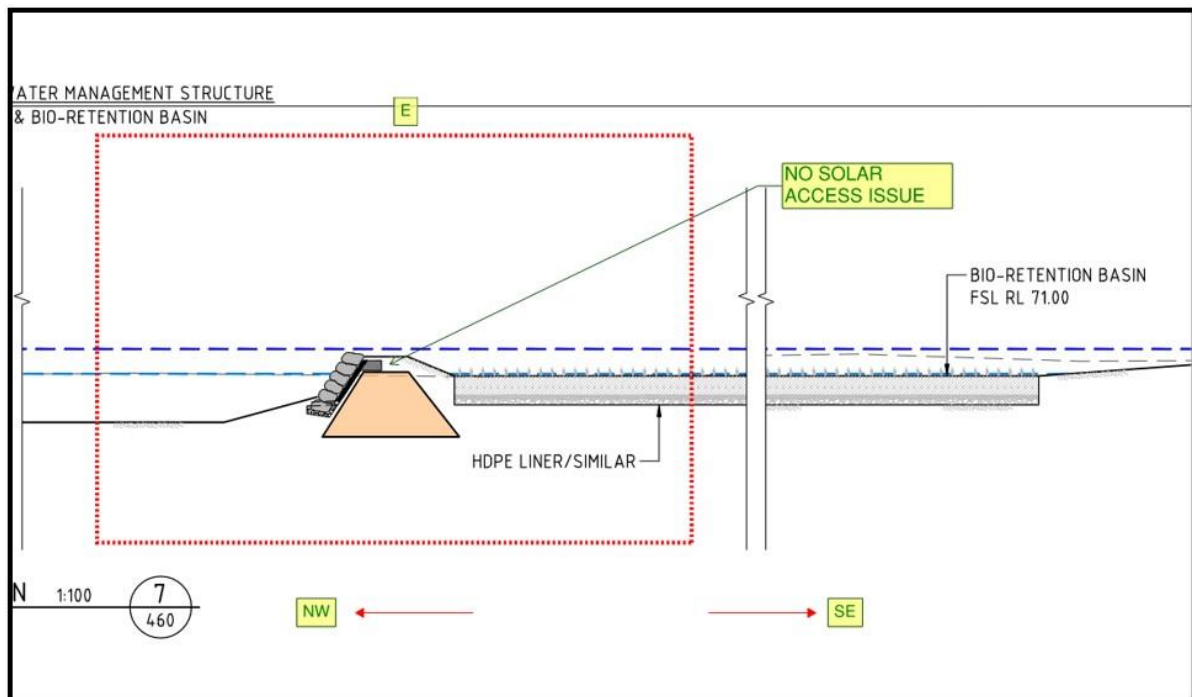


Figure 9 – Section E through Basin 3

Section F:

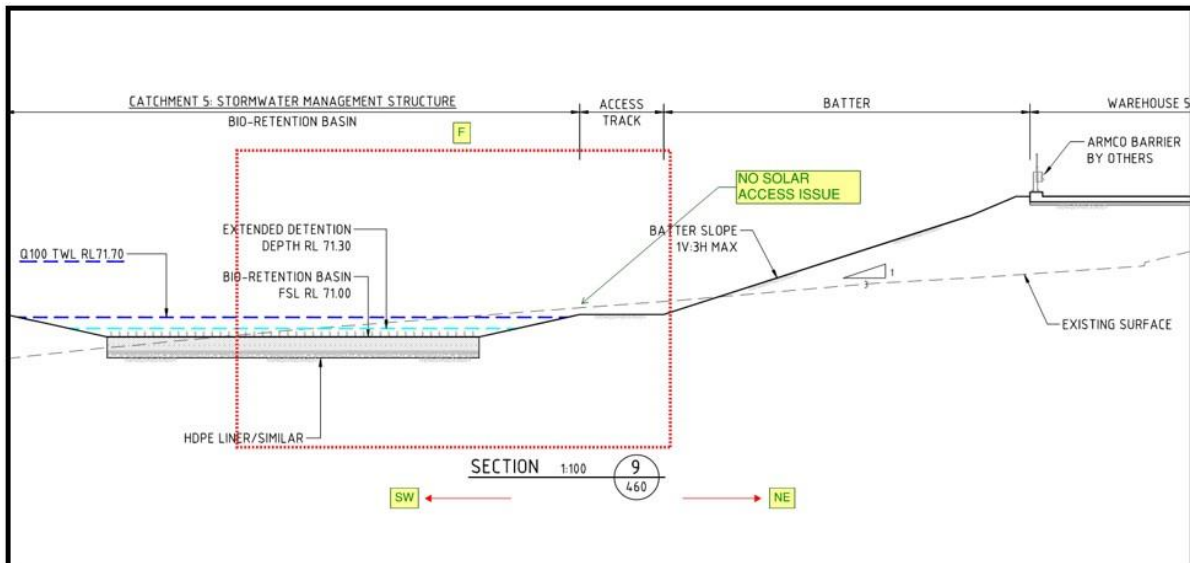


Figure 10 – Section F through Basin 3

STATE SIGNIFICANT DEVELOPMENT APPLICATION

AUGUSTA STREET, HUNTINGWOOD EAST, NSW, 2148

CIVIL WORKS PACKAGE

DRAWING LIST

DRAWING NO.	DRAWING TITLE
GENERAL:	
C013904.03-SSDA 100	DRAWING LIST & GENERAL NOTES

EROSION & SEDIMENT CONTROL:

C013904.03-SSDA 200	EROSION AND SEDIMENT CONTROL ENGINEERING NOTES
C013904.03-SSDA 201	EROSION AND SEDIMENT CONTROL PLAN - STAGE 1
C013904.03-SSDA 202	EROSION AND SEDIMENT CONTROL PLAN - STAGE 2
C013904.03-SSDA 250	EROSION AND SEDIMENT CONTROL DETAILS - SHEET 1
C013904.03-SSDA 251	EROSION AND SEDIMENT CONTROL DETAILS - SHEET 2

EARTHWORKS PLAN:

C013904.03-SSDA 300	BULK EARTHWORKS PLAN
C013904.03-SSDA 310	CUT & FILL PLAN
C013904.03-SSDA 350	BULK EARTHWORKS SECTIONS - SHEET 1
C013904.03-SSDA 351	BULK EARTHWORKS SECTIONS - SHEET 2
C013904.03-SSDA 352	BULK EARTHWORKS SECTIONS - SHEET 3

INFRASTRUCTURE DRAINAGE:

C013904.03-SSDA 400	STORMWATER DRAINAGE KEY PLAN
C013904.03-SSDA 401	STORMWATER DRAINAGE PLAN - WAREHOUSE 1 & 2
C013904.03-SSDA 402	STORMWATER DRAINAGE PLAN - WAREHOUSE 3
C013904.03-SSDA 403	STORMWATER DRAINAGE PLAN - WAREHOUSE 4
C013904.03-SSDA 404	STORMWATER DRAINAGE PLAN - WAREHOUSE 5 GROUND FLOOR
C013904.03-SSDA 410	BLACKTOWN CREEK REALIGNMENT PLAN
C013904.03-SSDA 415	WESTERN SWALE PLAN
C013904.03-SSDA 450	STORMWATER DRAINAGE DETAILS - SHEET 1
C013904.03-SSDA 451	STORMWATER DRAINAGE DETAILS - SHEET 2
C013904.03-SSDA 452	STORMWATER DRAINAGE DETAILS - SHEET 3
C013904.03-SSDA 453	STORMWATER DRAINAGE DETAILS - SHEET 4
C013904.03-SSDA 454	STORMWATER DRAINAGE DETAILS - SHEET 5
C013904.03-SSDA 455	STORMWATER DRAINAGE DETAILS - SHEET 6
C013904.03-SSDA 456	STORMWATER DRAINAGE DETAILS - SHEET 7
C013904.03-SSDA 457	STORMWATER DRAINAGE DETAILS - SHEET 8
C013904.03-SSDA 458	STORMWATER DRAINAGE DETAILS - SHEET 9
C013904.03-SSDA 459	TYPICAL CLAY CORE DETAIL
C013904.03-SSDA 460	STORMWATER MANAGEMENT LAYOUT & TYPICAL SECTIONS KEY PLAN
C013904.03-SSDA 461	TYPICAL BELOW GROUND OSD & WATER QUALITY TANK DETAIL
C013904.03-SSDA 462	ABOVE GROUND BIORETENTION AND OSD BASIN DETAILS - LOT 3
C013904.03-SSDA 463	ABOVE GROUND BIORETENTION AND OSD BASIN DETAILS - LOT 4
C013904.03-SSDA 464	ABOVE GROUND BIORETENTION AND OSD BASIN DETAILS - LOT 5
C013904.03-SSDA 465	TYPICAL OSD BASIN CONTROL & DISCHARGE PIT DETAIL
C013904.03-SSDA 466	TYPICAL WETLAND DETAIL 
C013904.03-SSDA 470	PRE DEVELOPMENT STORMWATER CATCHMENT PLAN
C013904.03-SSDA 471	POST DEVELOPMENT STORMWATER CATCHMENT PLAN

DRAWING LIST

DRAWING NO.	DRAWING TITLE
FINISHED LEVELS:	
C013904.03-SSDA 500	FINISHED LEVELS KEY PLAN
C013904.03-SSDA 501	FINISHED LEVELS PLAN - WAREHOUSE 1 & 2
C013904.03-SSDA 502	FINISHED LEVELS PLAN - WAREHOUSE 3
C013904.03-SSDA 503	FINISHED LEVELS PLAN - WAREHOUSE 4
C013904.03-SSDA 504	FINISHED LEVELS PLAN - WAREHOUSE 5 GROUND FLOOR
C013904.03-SSDA 550	KEY SECTIONS PLAN
C013904.03-SSDA 551	BLACKTOWN CREEK SECTIONS - SHEET 1
C013904.03-SSDA 552	BLACKTOWN CREEK SECTIONS - SHEET 2
C013904.03-SSDA 553	WESTERN SWALE SECTIONS - SHEET 1

RETAINING WALLS:

C013904.03-SSDA 650	TYPICAL RETAINING WALL DETAILS - SHEET 1
C013904.03-SSDA 651	TYPICAL RETAINING WALL DETAILS - SHEET 2
C013904.03-SSDA 652	TYPICAL RETAINING WALL DETAILS - SHEET 3

ROADWORKS:

C013904.03-SSDA 700	ROADWORKS GENERAL ARRANGEMENT PLAN
C013904.03-SSDA 711	ROADWORKS CIVIL WORKS PLAN - SHEET 1
C013904.03-SSDA 712	ROADWORKS CIVIL WORKS PLAN - SHEET 2
C013904.03-SSDA 721	ROADWORKS LONG SECTIONS FLUSHCOMBE ROAD
C013904.03-SSDA 730	ROADWORKS CROSS SECTIONS - FLUSHCOMBE ROAD - SHEET 1
C013904.03-SSDA 731	ROADWORKS CROSS SECTIONS - FLUSHCOMBE ROAD - SHEET 2
C013904.03-SSDA 732	ROADWORKS CROSS SECTIONS - FLUSHCOMBE ROAD - SHEET 3
C013904.03-SSDA 733	ROADWORKS CROSS SECTIONS - AUGUSTA STREET - SHEET 1
C013904.03-SSDA 734	ROADWORKS CROSS SECTIONS - AUGUSTA STREET - SHEET 2
C013904.03-SSDA 735	ROADWORKS CROSS SECTIONS - AUGUSTA STREET - SHEET 3
C013904.03-SSDA 750	ROADWORKS TYPICAL SECTIONS
C013904.03-SSDA 755	ROADWORKS TYPICAL DETAILS
C013904.03-SSDA 756	PROPOSED AUGUSTA STREET CULVERT CROSSING



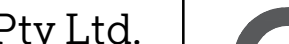
GENERAL NOTES:

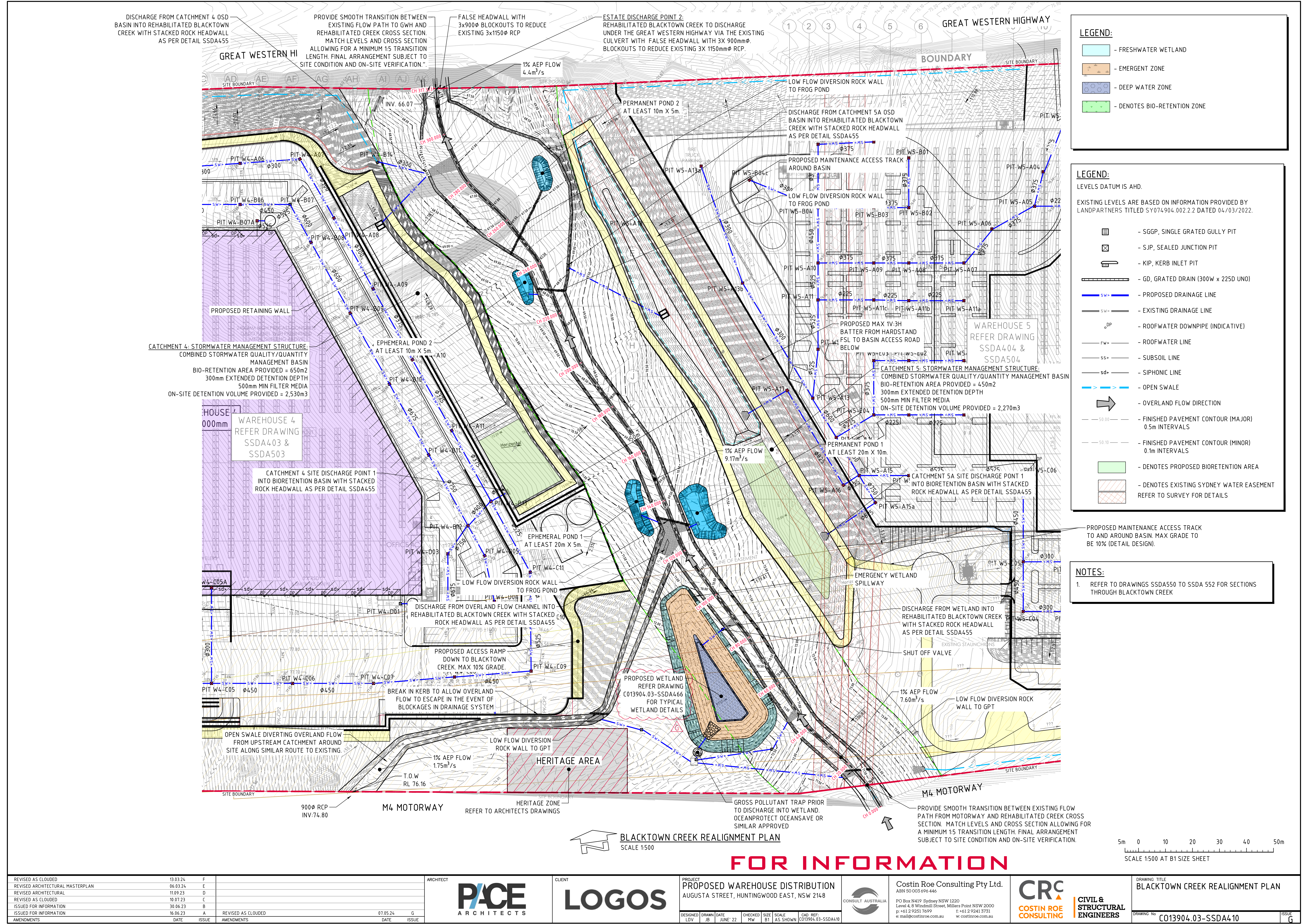
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.
- ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. ENGINEER'S DRAWINGS ISSUED IN ANY ELECTRONIC FORMAT MUST NOT BE USED FOR DIMENSIONAL SETOUT. REFER TO THE ARCHITECT'S DRAWINGS FOR ALL DIMENSIONAL SETOUT INFORMATION.
- DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
- UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
- ALL WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH ACCEPTABLE SAFETY STANDARDS & APPROPRIATE SAFETY SIGNS SHALL BE INSTALLED AT ALL TIMES DURING THE PROGRESS OF THE JOB.

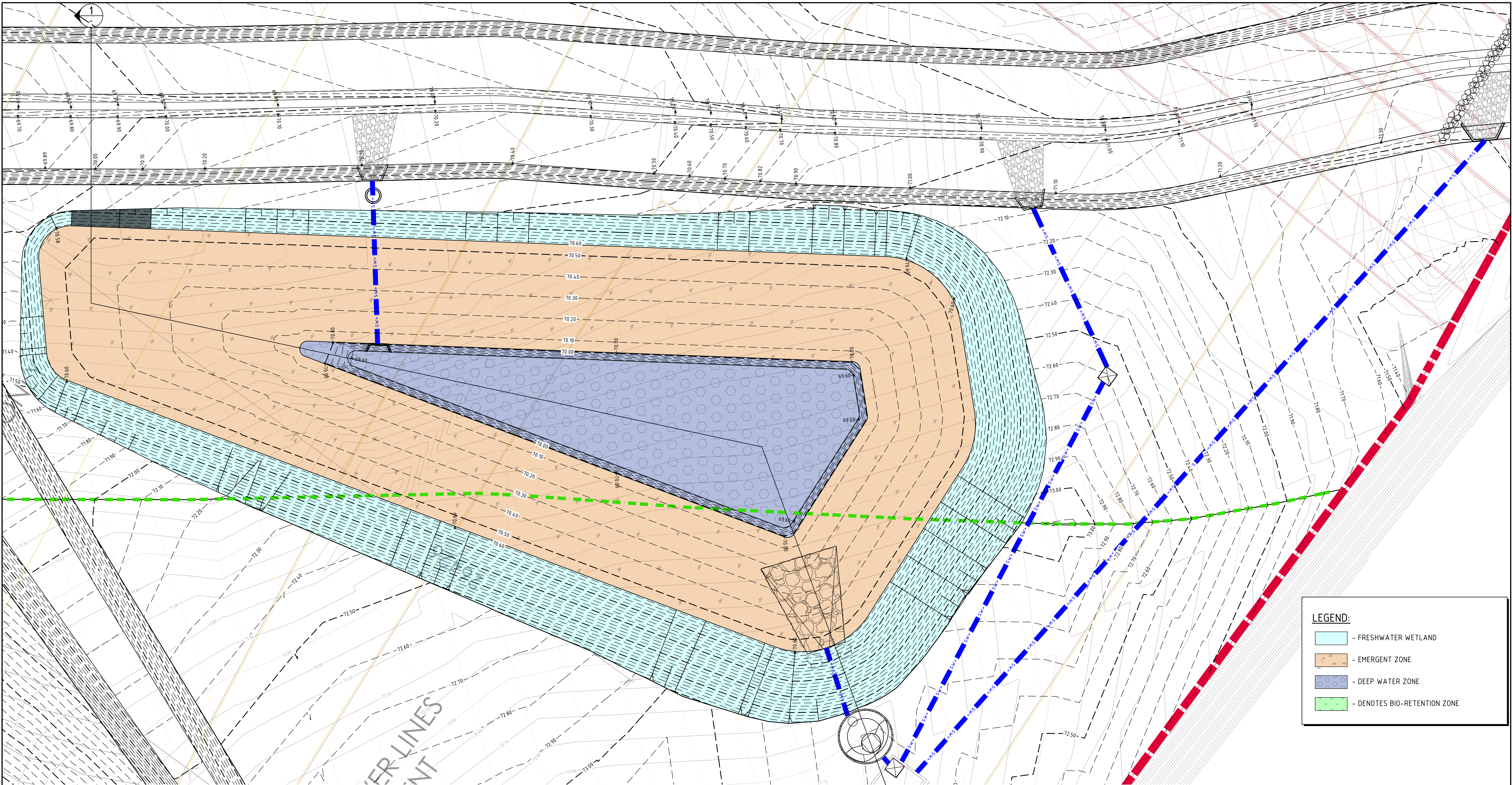
ELECTRONIC INFORMATION NOTES:

- THE ISSUED DRAWINGS IN HARD COPY OR PDF FORMAT TAKE PRECEDENCE OVER ANY ELECTRONICALLY ISSUED INFORMATION, LAYOUTS OR DESIGN MODELS.
- THE CONTRACTOR'S DIRECT AMENDMENT OR MANIPULATION OF THE DATA OR INFORMATION THAT MIGHT BE CONTAINED WITHIN AN ENGINEER-SUPPLIED DIGITAL TERRAIN MODEL AND ITS SUBSEQUENT USE TO UNDERTAKE THE WORKS WILL BE SOLELY AT THE DISCRETION OF AND THE RISK OF THE CONTRACTOR.
- THE CONTRACTOR IS REQUIRED TO HIGHLIGHT ANY DISCREPANCIES BETWEEN THE DIGITAL TERRAIN MODEL AND INFORMATION PROVIDED IN THE CONTRACT AND/OR DRAWINGS AND IS REQUIRED TO SEEK CLARIFICATION FROM THE SUPERINTENDENT.
- THE ENGINEER WILL NOT BE LIABLE OR RESPONSIBLE FOR THE POSSIBLE ON-GOING NEED TO UPDATE THE DIGITAL TERRAIN MODEL, SHOULD THERE BE ANY AMENDMENTS OR CHANGES TO THE DRAWINGS OR CONTRACT INITIATED BY THE CONTRACTOR.

FOR INFORMATION

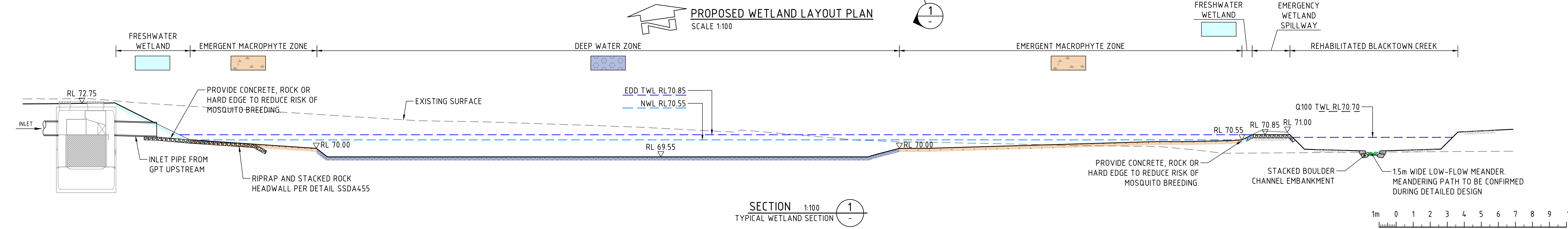
REVISED AS CLOUDED			07.05.24	F		ARCHITECT 	CLIENT 	PROJECT PROPOSED WAREHOUSE DISTRIBUTION AUGUSTA STREET, HUNTINGWOOD EAST, NSW 2148	 CONSULT AUSTRALIA	Costin Roe Consulting Pty Ltd. ABN 50 003 696 446 PO Box N419 Sydney NSW 1220 Level 4, 8 Windmill Street, Millers Point NSW 2000 p: +61 2 9251 7699 f: +61 2 9241 3731 e: mail@costinroe.com.au w: costinroe.com.au	 CIVIL & STRUCTURAL ENGINEERS	DRAWING TITLE			DRAWING LIST & GENERAL NOTES		
REVISED AS CLOUDED			13.03.24	E													
REVISED AS CLOUDED			08.03.24	D													
REVISED AS CLOUDED			08.09.23	C													
REVISED AS CLOUDED			30.06.23	B													
ISSUED FOR INFORMATION			16.06.23	A													
AMENDMENTS		DATE	ISSUE	AMENDMENTS		DATE	ISSUE					DRAWING No	C013904.03-SSDA100		ISSUE	F	





LEGEND:

- FRESHWATER WETLAND
- EMERGENT ZONE
- DEEP WATER ZONE
- DENOTES BIO-RETENTION ZONE



FOR INFORMATION

ISSUED FOR INFORMATION			ARCHITECT			CLIENT			PROJECT			COSTIN ROE CONSULTING PTY LTD.			DRAWING TITLE		
AMENDMENTS			P/ACE ARCHITECTS			LOGOS			PROPOSED WAREHOUSE DISTRIBUTION AUGUSTA STREET, HUNTINGWOOD EAST, NSW 2148			ABN 50 003 696 446			TYPICAL WETLAND DETAIL & SECTION		
16.06.23			A			JUNE '22			DESIGNED LDV			PO Box N419 Sydney NSW 1220			DRAWING No		
DATE			ISSUE			CHECKED MW			LEVEL 4, 8 Windmill Street, Millers Point NSW 2000			COSTIN ROE CONSULTING			C013904.03-SSDA466		
AMENDMENTS			DATE			SIZE B1			p: +61 2 9251 7699			CIVIL & STRUCTURAL ENGINEERS			ISSUE		
						SCALE AS SHOWN			e: mail@costinroe.com.au						A		
						CAD REF: C013904.03-SSDA466			w: costinroe.com.au								