


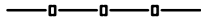
An architectural rendering of the Tweed Valley Hospital. The building is a large, modern structure with a central glass-fronted entrance and wings on either side. The facade is composed of vertical wooden slats and glass panels. The name 'Tweed Valley Hospital' is visible on the left wing. The building is surrounded by a landscaped area with tall grasses, white flowers, and various trees. A parking lot with a few cars is in front of the building. The sky is blue with scattered white clouds. The image is framed by tree branches in the top corners.

# CIVIL DRAWINGS


LEGEND



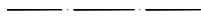
FALLS (TYP)



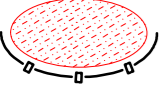
SEDIMENT FENCE



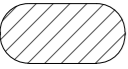
CATCH DRAIN




LAND BOUNDARY



PROPOSED TEMPORARY STOCKPILE LOCATION WITH SEDIMENT FENCE AROUND



EXISTING SEDIMENT BASIN (CONSTRUCTED AS PRELIMINARY WORKS)

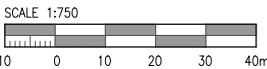
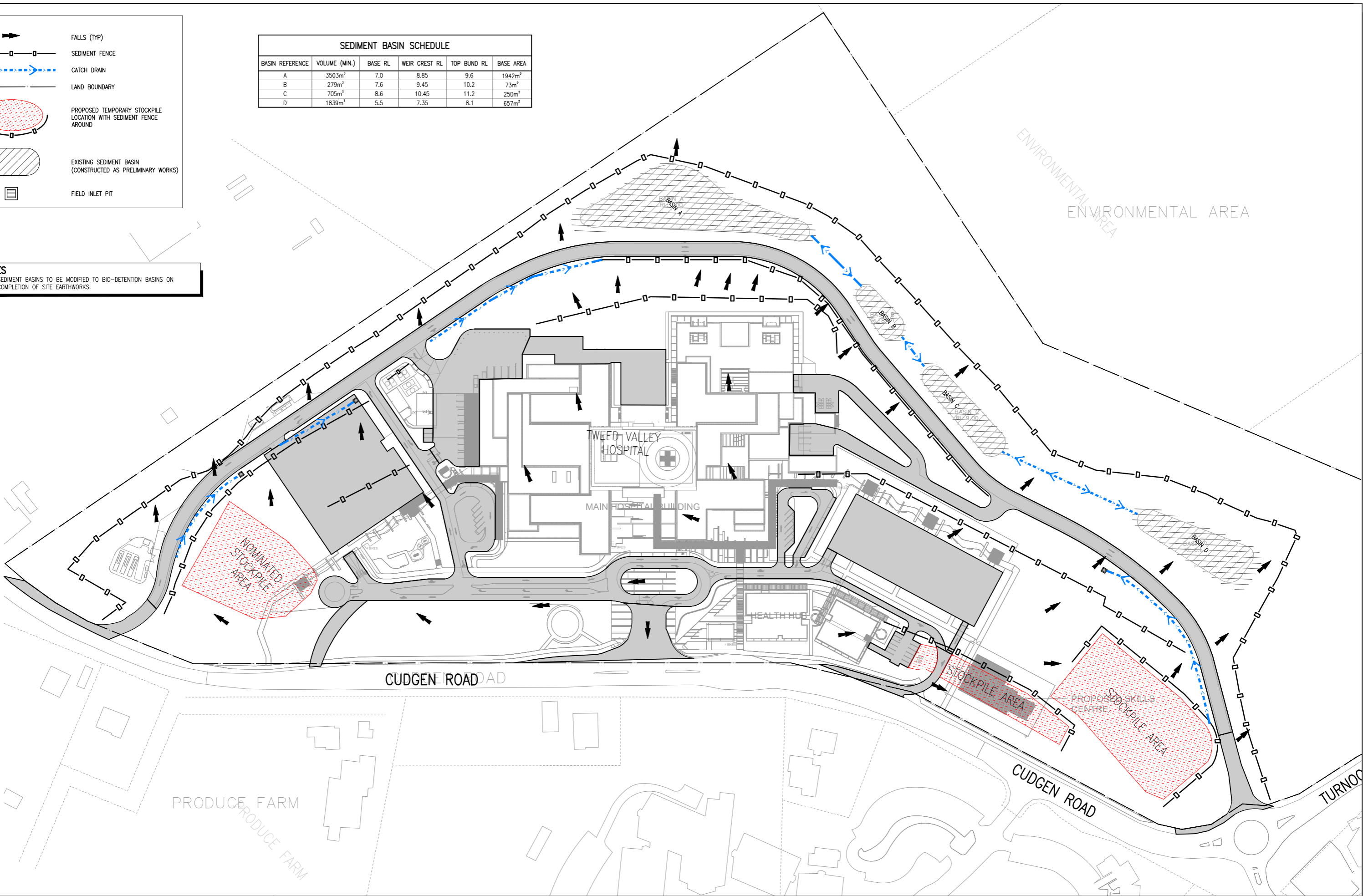


FIELD INLET PIT

SEDIMENT BASIN SCHEDULE					
BASIN REFERENCE	VOLUME (MIN.)	BASE RL	WEIR CREST RL	TOP BUND RL	BASE AREA
A	3503m <sup>3</sup>	7.0	8.85	9.6	1942m <sup>2</sup>
B	279m <sup>3</sup>	7.6	9.45	10.2	73m <sup>2</sup>
C	705m <sup>3</sup>	8.6	10.45	11.2	250m <sup>2</sup>
D	1839m <sup>3</sup>	5.5	7.35	8.1	657m <sup>2</sup>

NOTES

1. SEDIMENT BASINS TO BE MODIFIED TO BIO-DETENTION BASINS ON COMPLETION OF SITE EARTHWORKS.



Rev	Revision Description	By	App	Date
1	ISSUED FOR SSDA2	MC	CR	13.08.19
2	ISSUED FOR SSDA2	MC	CR	12.09.19


Rev	Revision Description	By	App	Date
1	ISSUED FOR SSDA2	MC	CR	13.08.19
2	ISSUED FOR SSDA2	MC	CR	12.09.19

Disclaimer: Robert Bird Group Pty Ltd (ABN 010 580 340) and its related entities (RBG) do not warrant the accuracy, currency or completeness of any information or data they supply or transfer by electronic means. You are responsible for verifying that any information or data supplied or transferred by electronic means matches the information or data on the corresponding PDF or other version issued by RBG. RBG will not be liable for any loss or damage you or any other party incur as a result of acting in reliance on any information or data supplied or transferred by electronic means and you release RBG from any liability for any loss or damage however caused which you or any other party may directly or indirectly suffer in connection with your access to or use of that information or data.

RBG provides this information for the express purpose contemplated by the underlying terms of engagement for the project which must not be used for any other purpose. The information is not a contractual document. Unless otherwise agreed in writing by RBG, all intellectual property rights in any information supplied by RBG are owned by, or licensed to, RBG. RBG only provides you with a non-transferable, fully revocable licence to use the intellectual property rights for the express purpose.

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS  
REFER TO GENERAL NOTES UNLESS NOTED OTHERWISE

Structural, Civil & Construction  
Engineering Consultant

**Robert Bird Group**  
Member of the Surbana Jurong Group

SYDNEY OFFICE  
Robert Bird Group Pty Ltd  
PO Box A3309  
Sydney South, NSW 1235  
Level 11, 151 Castlemagh St  
Sydney NSW 2000

Ph: (02) 8246 3200  
Fax: (02) 8246 3201  
Email: [sydney@robertbird.com.au](mailto:sydney@robertbird.com.au)  
Web: [www.robertbird.com](http://www.robertbird.com)  
ABN 010 580 340

Client



Title

STAGE 2 SSDA  
EROSION & SEDIMENT CONTROL  
PLAN

Project

TWEED VALLEY HOSPITAL  
TWEED SHIRE, GREENFIELD SITE,  
NORTHERN RIVERS, NSW 2485

Scale at A1  
AS SHOWN  
Date  
13.08.19

Drawn  
M.CLAVEL  
Designer  
Z.JONES

Design Checker  
D.RAVANDEH  
Approved  
C.ROPE  
Job Number  
19005

NOT FOR CONSTRUCTION

Drawing Number  
RBG-CV-DWG-RIE-81-300

Revision  
2

LEGEND

SITE BOUNDARY

PROPOSED STORMWATER DRAINAGE PIPE

PROPOSED STORMWATER DRAINAGE PIT

PROPOSED STORMWATER DRAINAGE FLOW DIRECTION

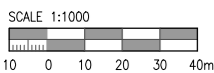
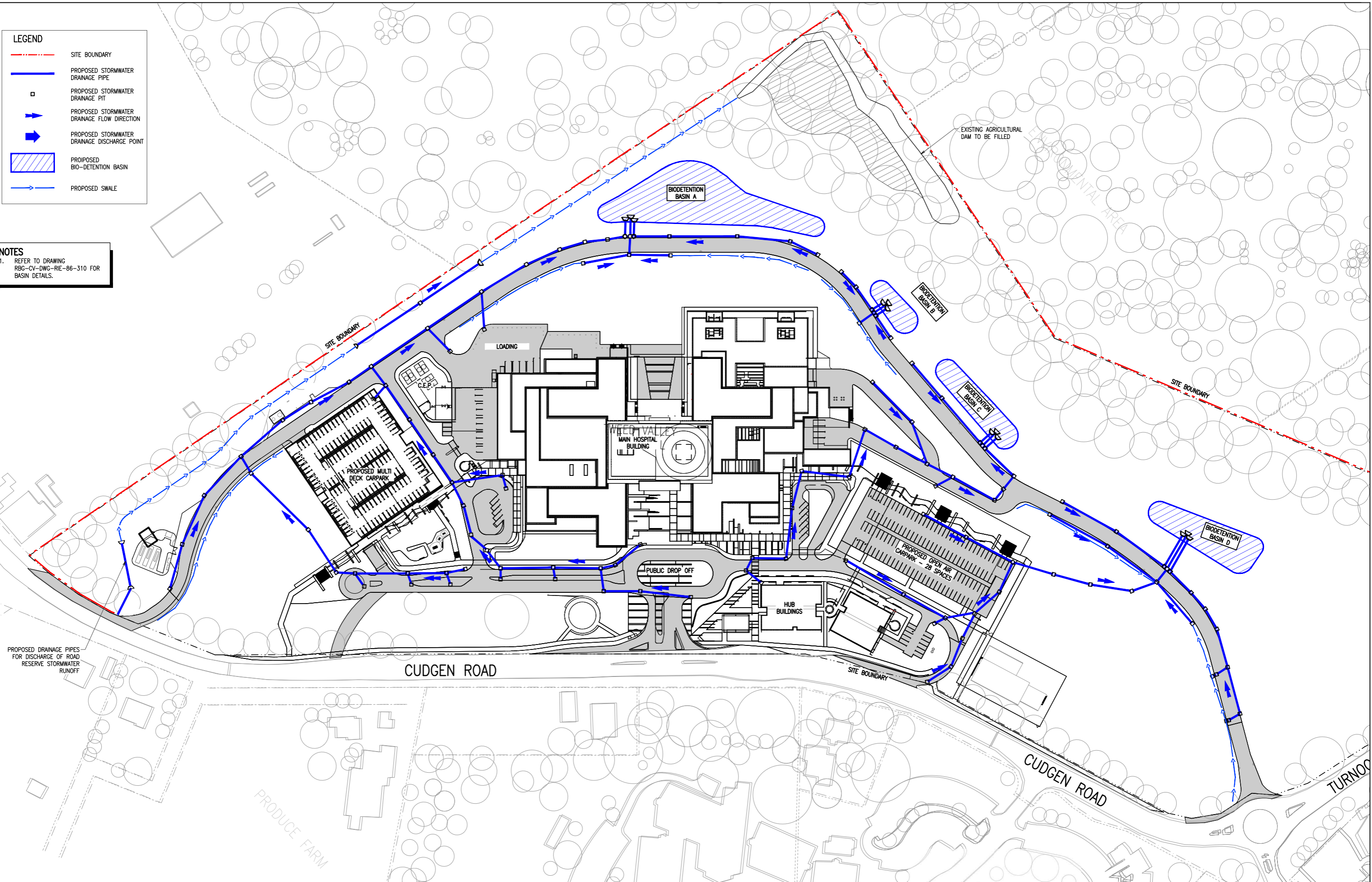
PROPOSED STORMWATER DRAINAGE DISCHARGE POINT

PROPOSED BIO-DETENTION BASIN

PROPOSED SWALE

NOTES

1. REFER TO DRAWING RBG-CV-DWG-RIE-86-310 FOR BASIN DETAILS.



Rev	Revision Description	By	App	Date
1	ISSUED FOR SSDA2	MC	CR	13.08.19
2	ISSUED FOR SSDA2	MC	CR	12.09.19

Rev	Revision Description	By	App	Date
1	ISSUED FOR SSDA2	MC	CR	13.08.19
2	ISSUED FOR SSDA2	MC	CR	12.09.19

Disclaimer: Robert Bird Group Pty Ltd (RBG) and its related entities (RBE) do not warrant the accuracy, currency or completeness of any information or data they supply or transfer by electronic means. You are responsible for verifying that any information or data supplied or transferred by electronic means matches the information or data on the corresponding PDF or other written form issued by RBG. RBG will not be liable for any loss or damage you or any other party incur as a result of acting in reliance on any information or data supplied or transferred by electronic means and you release RBG from any liability for any loss or damage however caused which you or any other party may directly or indirectly suffer in connection with your access to or use of that information or data.

RBG provides this information for the express purpose contemplated by the underlying terms of engagement for the project which must not be used for any other purpose. This information is not a contractual document. Unless otherwise agreed in writing by RBG, all intellectual property rights in any information supplied by RBG are owned by, or licensed to, RBG. RBG only provides you with a non-transferable, fully revocable licence to use the intellectual property rights for the express purpose.

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS  
REFER TO GENERAL NOTES UNLESS NOTED OTHERWISE

Structural, Civil & Construction Engineering Consultant

Robert Bird Group

Member of the Surbana Jurong Group

SYDNEY OFFICE

Robert Bird Group Pty Ltd  
PO Box A3309  
Sydney South, NSW 1235  
Level 11, 151 Castlereagh St  
Sydney NSW 2000

Ph: (02) 8246 3200  
Fax: (02) 8246 3201  
Email: [sydney@robertbird.com.au](mailto:sydney@robertbird.com.au)  
Web: [www.robertbird.com](http://www.robertbird.com)  
ACN 010 580 248

Client

Title

STAGE 2 SSDA  
STORMWATER DRAINAGE PLAN

Project

TWEED VALLEY HOSPITAL  
TWEED SHIRE, GREENFIELD SITE,  
NORTHERN RIVERS, NSW 2485

Scale at A1

AS SHOWN

Date

13.08.19

Drawn

M.CLAVEL

Designer

Z.JONES

Design Checker

D.RAVANDEH

Approved

C.ROPE

Job Number

19005

NOT FOR CONSTRUCTION

Drawing Number

RBG-CV-DWG-RIE-86-300

Revision

2

LEGEND

PROPOSED SITE BOUNDARY

PROPOSED LANDSCAPED AREA

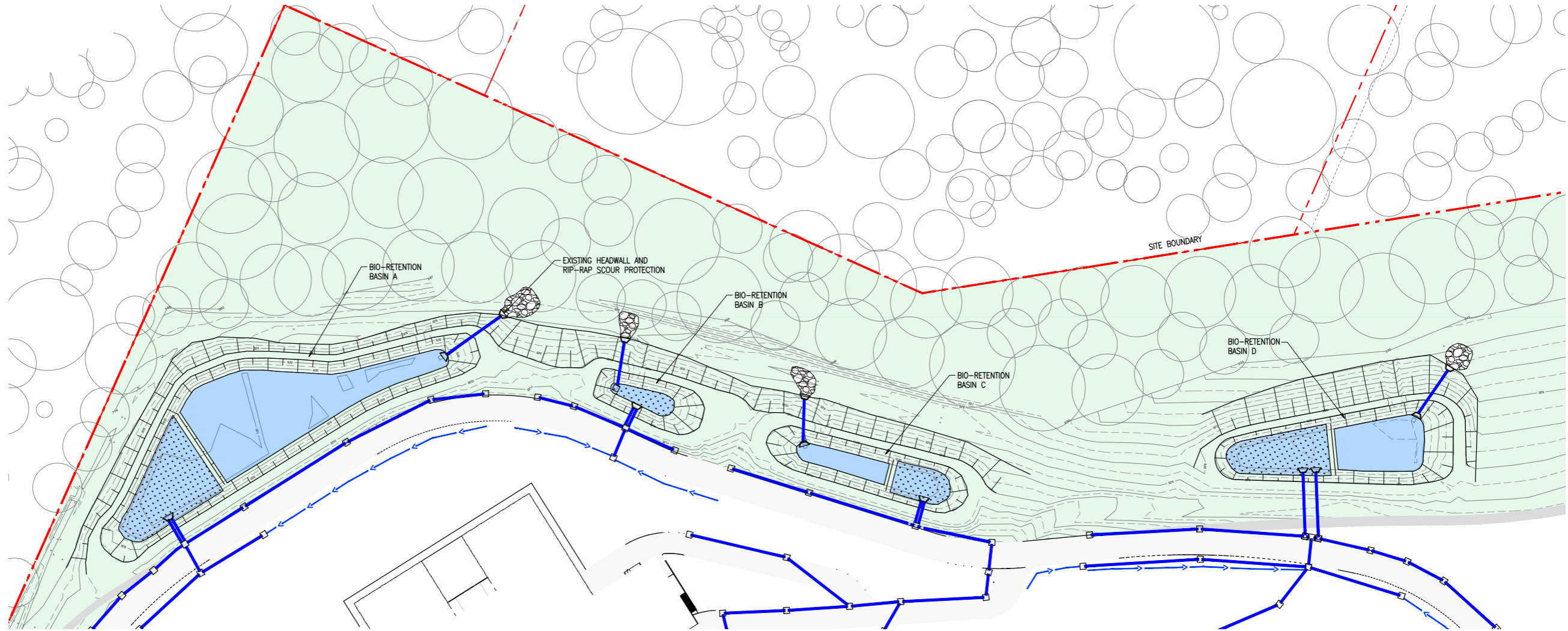
PROPOSED BIO-RETENTION PLANTING TO LANDSCAPE DETAILS

PROPOSED DETENTION BASIN

PROPOSED STORMWATER PIPE

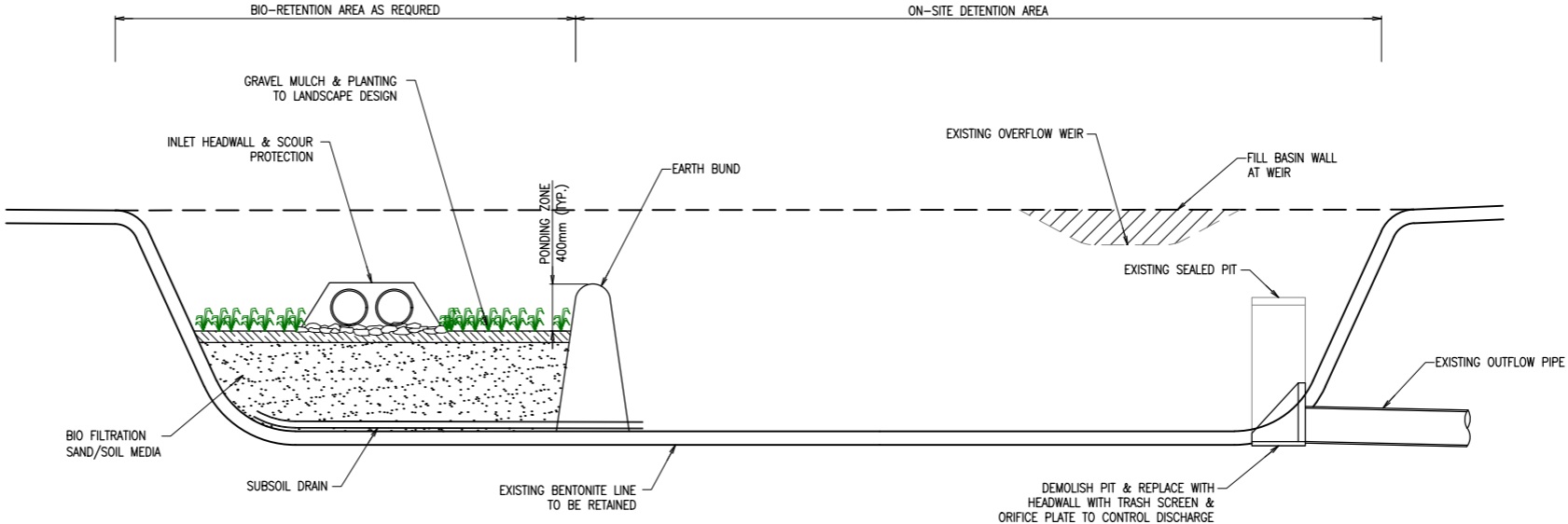
PROPOSED HEADWALL

PROPOSED STORMWATER PIT

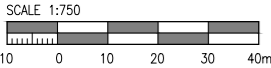


BIO-DETENTION BASINS PLAN  
SCALE 1:750

BIO-DETENTION BASIN SCHEDULE		
BASIN	MIN. AREA OF FILTER MEDIA (m <sup>2</sup> )	MIN. VOLUME OF DETENTION STORAGE (m <sup>3</sup> )
A	450	5,450
B	25	455
C	170	1,080
D	300	2,080
TOTAL	945	9,065



BIO-DETENTION BASIN TYPICAL SECTION  
N.T.S.



Rev	Revision Description	By	App	Date
1	ISSUED FOR SSDA2	MC	CR	13.08.19
2	ISSUED FOR SSDA2	MC	CR	12.09.19
3	ISSUED FOR SSDA2	RG	CR	05.12.19

Rev	Revision Description	By	App	Date
-----	----------------------	----	-----	------

Disclaimer: Robert Bird Group Pty Ltd ACN 010 580 248 and its related entities (RBG) do not warrant the accuracy, currency or completeness of any information or data they supply or transfer by electronic means. You are responsible for verifying that any information or data supplied or transferred by electronic means matches the information or data on the corresponding PDF or DWG version issued by RBG. RBG will not be liable for any loss or damage you or any other party incur as a result of acting in reliance on any information or data supplied or transferred by electronic means and you release RBG from any liability for any loss or damage however caused which you or any other party may directly or indirectly suffer in connection with your access to or use of that information or data. RBG provides this information for the express purpose contemplated by the underlying terms of engagement for the project which must not be used for any other purpose. The information is not a contractual document. Unless otherwise agreed in writing by RBG, all intellectual property rights in any information supplied by RBG are owned by, or licensed to, RBG. RBG only provides you with a non-transferable, fully revocable licence to use the intellectual property rights for the express purpose.

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS  
REFER TO GENERAL NOTES UNLESS NOTED OTHERWISE

Structural, Civil & Construction  
Engineering Consultant

RobertBirdGroup  
Member of the Surbana Jurong Group

SYDNEY OFFICE

Robert Bird Group Pty Ltd  
PO Box A2309  
Sydney South, NSW 1235  
Level 11, 151 Castlereagh St  
Sydney NSW 2000

Ph: (02) 8246 9200  
Fax: (02) 8246 3201  
Email: sydney@robertbird.com.au  
Web: www.robertbird.com  
ACN 010 580 248



Title

STAGE 2 SSDA  
BIO-RETENTION BASINS PLAN &  
DETAILS

Project

TWEED VALLEY HOSPITAL  
TWEED SHIRE, GREENFIELD SITE,  
NORTHERN RIVERS, NSW 2485

Scale at A1

AS SHOWN

Date

05.12.19

Drawn

M.CLAVEL

Designer

Z.JONES

Design Checker

C.WAITE  
Approved  
C.ROPE  
Job Number  
19005

NOT FOR CONSTRUCTION

Drawing Number

RBG-CV-DWG-RIE-86-310

Revision

3

LEGEND

--- SITE BOUNDARY

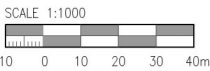
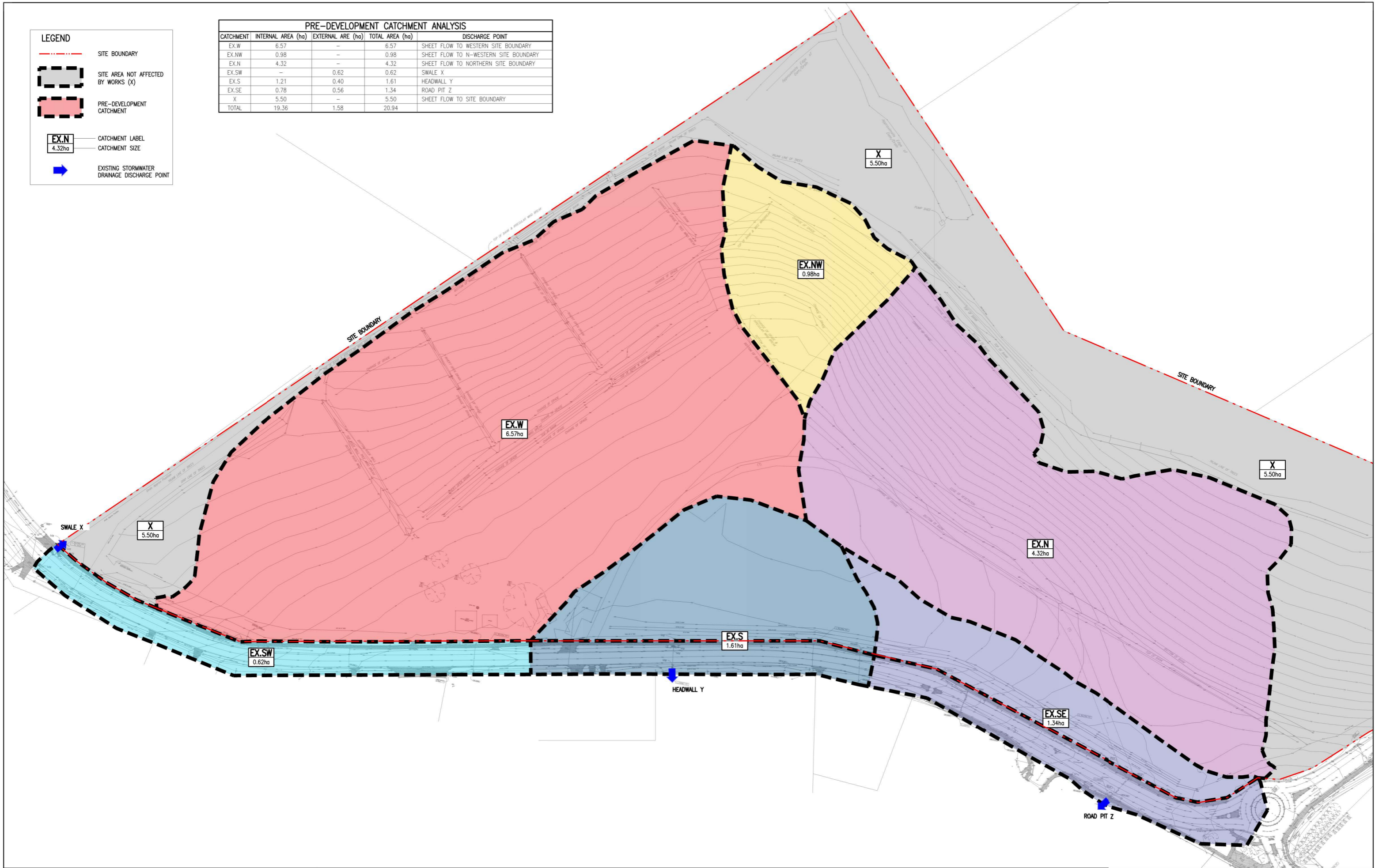
--- SITE AREA NOT AFFECTED BY WORKS (X)

--- PRE-DEVELOPMENT CATCHMENT

EX.N  
4.32ha CATCHMENT LABEL  
CATCHMENT SIZE

EXISTING STORMWATER DRAINAGE DISCHARGE POINT

PRE-DEVELOPMENT CATCHMENT ANALYSIS				
CATCHMENT	INTERNAL AREA (ha)	EXTERNAL ARE (ha)	TOTAL AREA (ha)	DISCHARGE POINT
EX.W	6.57	—	6.57	SHEET FLOW TO WESTERN SITE BOUNDARY
EX.NW	0.98	—	0.98	SHEET FLOW TO N-WESTERN SITE BOUNDARY
EX.N	4.32	—	4.32	SHEET FLOW TO NORTHERN SITE BOUNDARY
EX.SW	—	0.62	0.62	SWALE X
EX.S	1.21	0.40	1.61	HEADWALL Y
EX.SE	0.78	0.56	1.34	ROAD PIT Z
X	5.50	—	5.50	SHEET FLOW TO SITE BOUNDARY
TOTAL	19.36	1.58	20.94	



Rev	Revision Description	By	App	Date
1	ISSUED FOR SSDA2	MC	CR	13.08.19
2	ISSUED FOR SSDA2	MC	CR	12.09.19

Rev Revision Description By App Date

Disclaimer: Robert Bird Group Pty Ltd ACN 010 580 248 and its related entities (RBG) do not warrant the accuracy, currency or completeness of any information or data they supply or transfer by electronic means. You are responsible for verifying that any information or data supplied or transferred by electronic means matches the information or data on the corresponding PDF or DWG version issued by RBG. RBG will not be liable for any loss or damage you or any other party incurs as a result of acting in reliance on any information or data supplied or transferred by electronic means and you release RBG from any liability for any loss or damage however caused which you or any other party may directly or indirectly suffer in connection with your access to or use of that information or data.

RBG provides this information for the express purpose contemplated by the underlying terms of engagement for the project which must not be used for any other purpose. This information is not a contractual document. Unless otherwise agreed in writing by RBG, all intellectual property rights in any information supplied by RBG are owned by, or licensed to, RBG. RBG only provides you with a non-transferable, fully revocable licence to use the intellectual property rights for the express purpose.

DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS  
REFER TO GENERAL NOTES UNLESS NOTED OTHERWISE

Structural, Civil & Construction  
Engineering Consultant

**Robert Bird Group**  
Member of the Urbana Jurong Group

SYDNEY OFFICE  
Robert Bird Group Pty Ltd  
PO Box A2309  
Sydney South, NSW 1235  
Level 11, 151 Castlereagh St  
Sydney NSW 2000

Ph: (02) 8246 3200  
Fax: (02) 8246 3201  
Email: [sydney@robertbird.com.au](mailto:sydney@robertbird.com.au)  
Web: [www.robertbird.com](http://www.robertbird.com)  
ACN 010 580 248



Client

Title  
**STAGE 2 SSDA  
STORMWATER CATCHMENT PLAN –  
PRE DEVELOPMENT**

Project  
**TWEED VALLEY HOSPITAL  
TWEED SHIRE, GREENFIELD SITE,  
NORTHERN RIVERS, NSW 2485**

Scale at A1  
AS SHOWN  
Date  
13.08.19

Drawn  
M.CLAVEL  
Designer  
Z.JONES

Design Checker  
D.RAVANDEH  
Approved  
C.ROPE  
Job Number  
19005

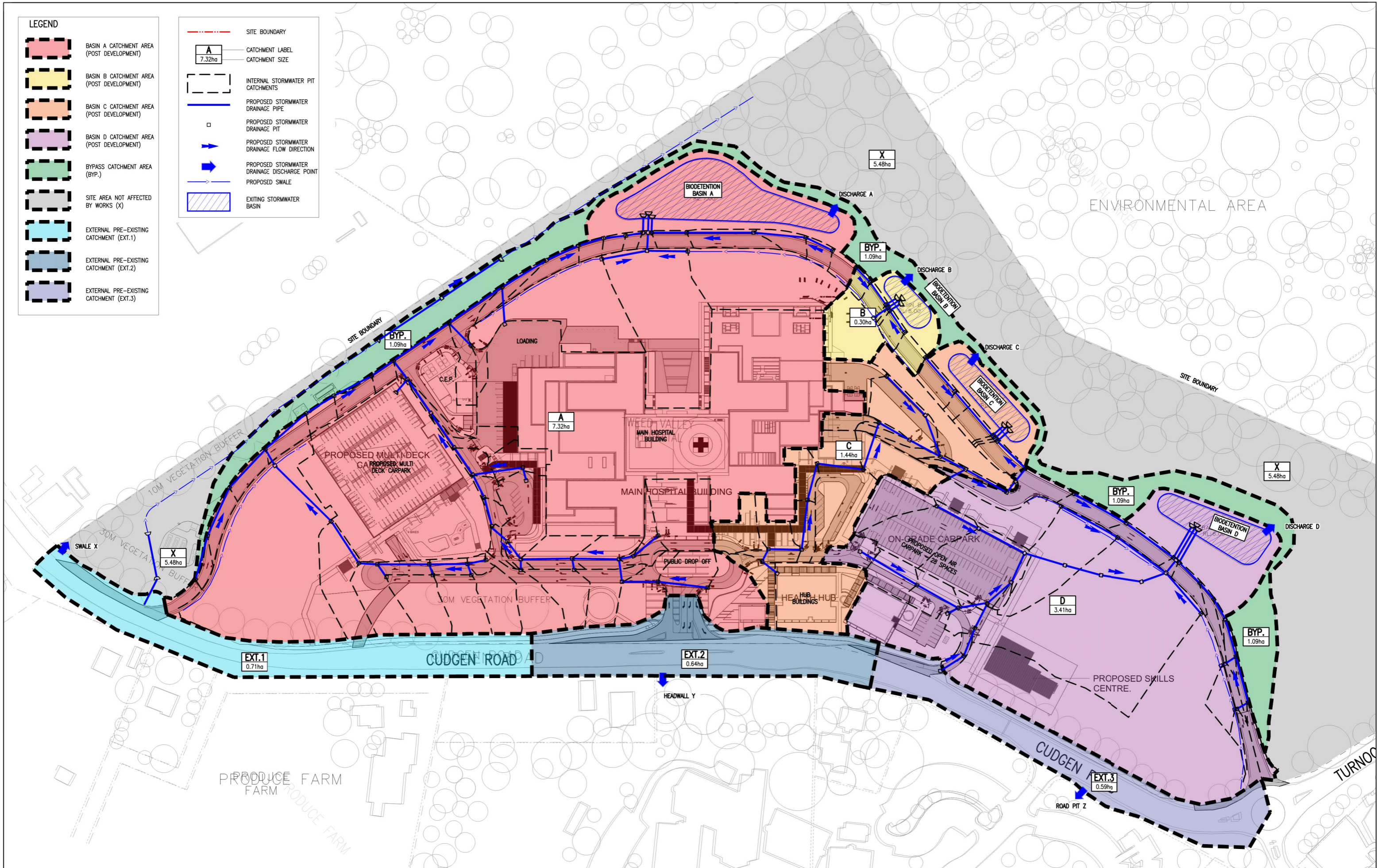
**NOT FOR CONSTRUCTION**

Drawing Number  
RBG-CV-DWG-RIE-86-350

Revision  
**2**

- LEGEND**
- BASIN A CATCHMENT AREA (POST DEVELOPMENT)
  - BASIN B CATCHMENT AREA (POST DEVELOPMENT)
  - BASIN C CATCHMENT AREA (POST DEVELOPMENT)
  - BASIN D CATCHMENT AREA (POST DEVELOPMENT)
  - BYPASS CATCHMENT AREA (BYP.)
  - SITE AREA NOT AFFECTED BY WORKS (X)
  - EXTERNAL PRE-EXISTING CATCHMENT (EXT.1)
  - EXTERNAL PRE-EXISTING CATCHMENT (EXT.2)
  - EXTERNAL PRE-EXISTING CATCHMENT (EXT.3)

- SITE BOUNDARY
- CATCHMENT LABEL
- CATCHMENT SIZE
- INTERNAL STORMWATER PIT CATCHMENTS
- PROPOSED STORMWATER DRAINAGE PIPE
- PROPOSED STORMWATER DRAINAGE PIT
- PROPOSED STORMWATER DRAINAGE FLOW DIRECTION
- PROPOSED STORMWATER DRAINAGE DISCHARGE POINT
- PROPOSED SWALE
- EXITING STORMWATER BASIN



Rev	Revision Description	By	App	Date
1	ISSUED FOR SSDA2	MC	CR	13.08.19
2	ISSUED FOR SSDA2	MC	CR	12.09.19

Rev	Revision Description	By	App	Date
1	ISSUED FOR SSDA2	MC	CR	13.08.19
2	ISSUED FOR SSDA2	MC	CR	12.09.19

Disclaimer: Robert Bird Group Pty Ltd (RBG) and its related entities (RBE) do not warrant the accuracy, currency or completeness of any information or data supplied or transferred by electronic means. You are responsible for verifying that any information or data supplied or transferred by electronic means matches the information or data on the corresponding PDF or other version issued by RBG. RBG will not be liable for any loss or damage you or any other party incur as a result of acting in reliance on any information or data supplied or transferred by electronic means and you release RBG from any liability for any loss or damage however caused which you or any other party may directly or indirectly suffer in connection with your access to or use of that information or data.

RBG provides this information for the express purpose contemplated by the underlying terms of engagement for the project which must not be used for any other purpose. The information is not a contractual document. Unless otherwise agreed in writing by RBG, all intellectual property rights in any information supplied by RBG are owned by, or licensed to, RBG. RBG only provides you with a non-transferable, fully revocable licence to use the intellectual property rights for the express purpose.

**DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS REFER TO GENERAL NOTES UNLESS NOTED OTHERWISE**

Structural, Civil & Construction Engineering Consultant

**Robert Bird Group**  
Member of the Surbana Jurong Group

**SYDNEY OFFICE**  
Robert Bird Group Pty Ltd  
PO Box A3309  
Sydney South, NSW 1235  
Level 11, 151 Castlereagh St  
Sydney NSW 2000

Ph: (02) 8246 3200  
Fax: (02) 8246 3201  
Email: [sydney@robertbird.com.au](mailto:sydney@robertbird.com.au)  
Web: [www.robertbird.com](http://www.robertbird.com)  
ACN 010 580 248

Client

**lendlease**

Title  
**STAGE 2 SSDA  
STORMWATER CATCHMENT PLAN -  
POST DEVELOPMENT**

Project  
**TWEED VALLEY HOSPITAL  
TWEED SHIRE, GREENFIELD SITE,  
NORTHERN RIVERS, NSW 2485**

Scale at A1  
AS SHOWN  
Date  
12.09.19

Drawn  
M. CLAVEL  
Designer  
Z. JONES

Design Checker  
D. RAVANDEH  
Approved  
C. ROPE  
Job Number  
19005

**NOT FOR CONSTRUCTION**

Drawing Number  
RBG-CV-DWG-RIE-86-351

Revision  
**2**