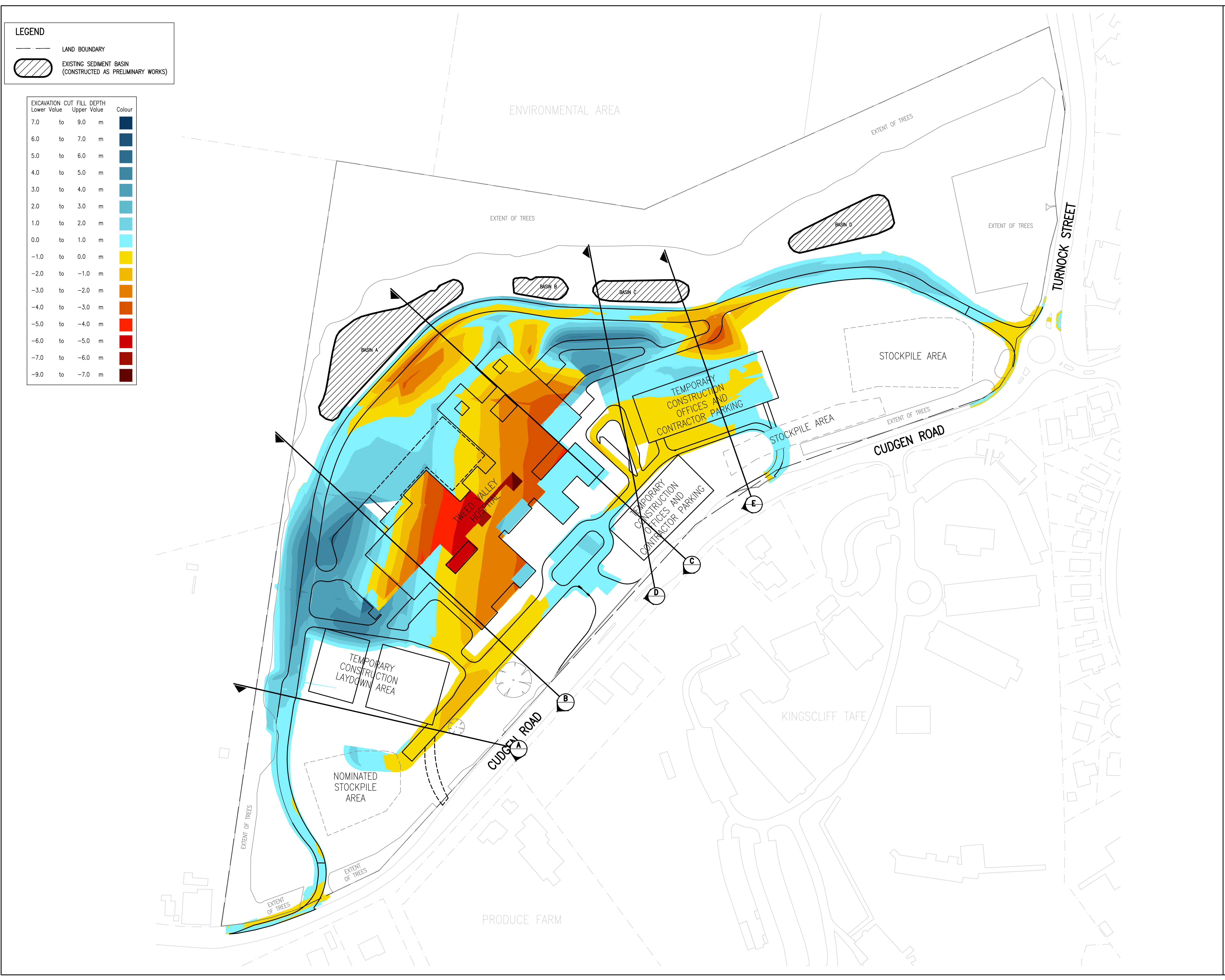


3	ISSUED FOR SSDA1	RG	CR	06.05.19
2	ISSUED FOR SSDA1	RG	CR	03.05.19
1	ISSUED FOR SSDA1	RG	CR	23.04.19
Rev	Revision Description	By	App	Date

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 reflects 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

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

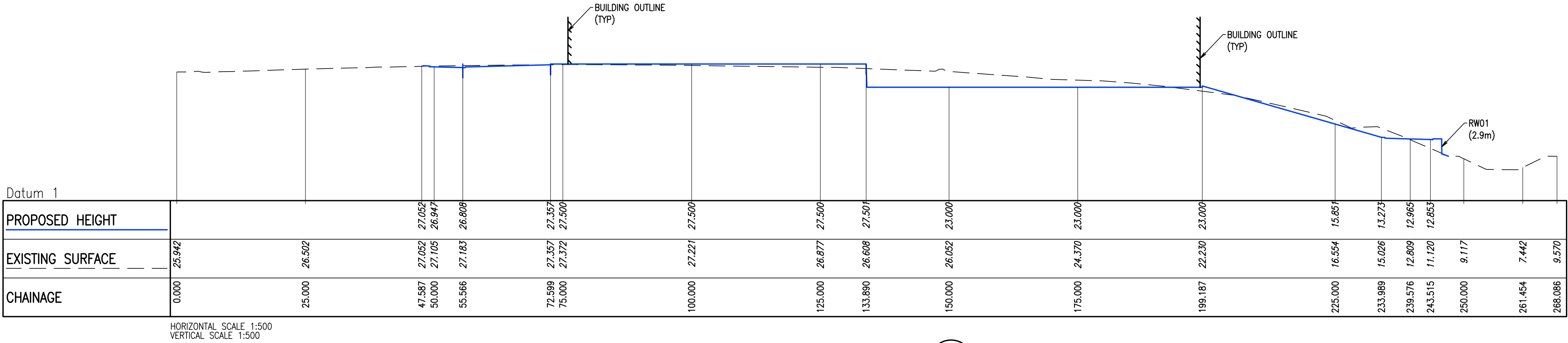
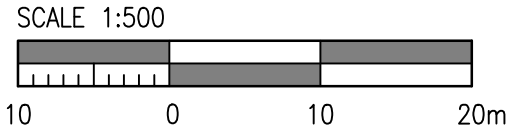
Ph: (02) 8246 3200
Fax: (02) 8246 3201
Email: sydney@robertbird.com.au
Web: www.robertbird.com
ACN 010 580 248



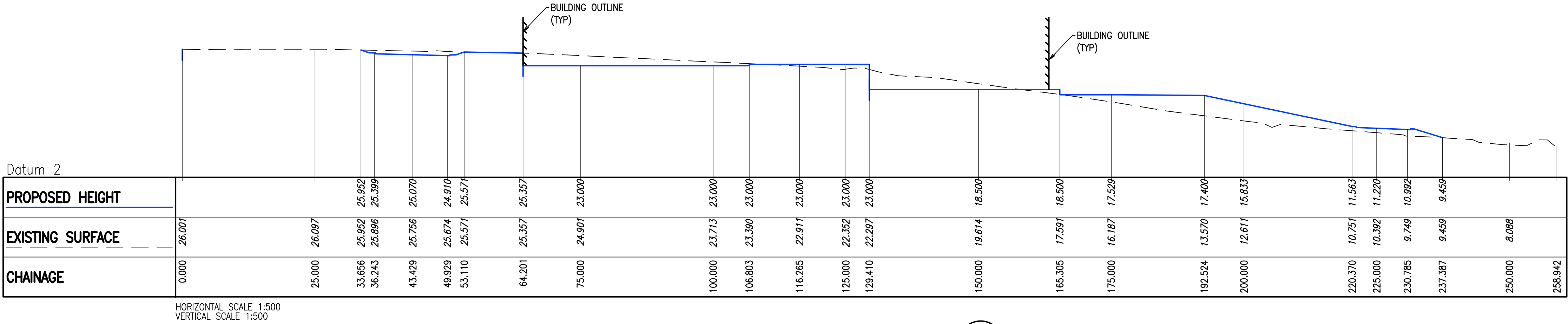
Project
TWEED VALLEY HOSPITAL
771 CUDDEN ROAD, CUDDEN NSW

Title
STAGE 1 EARLY AND ENABLING WORKS CONSTRUCTION CUT AND FILL PLAN

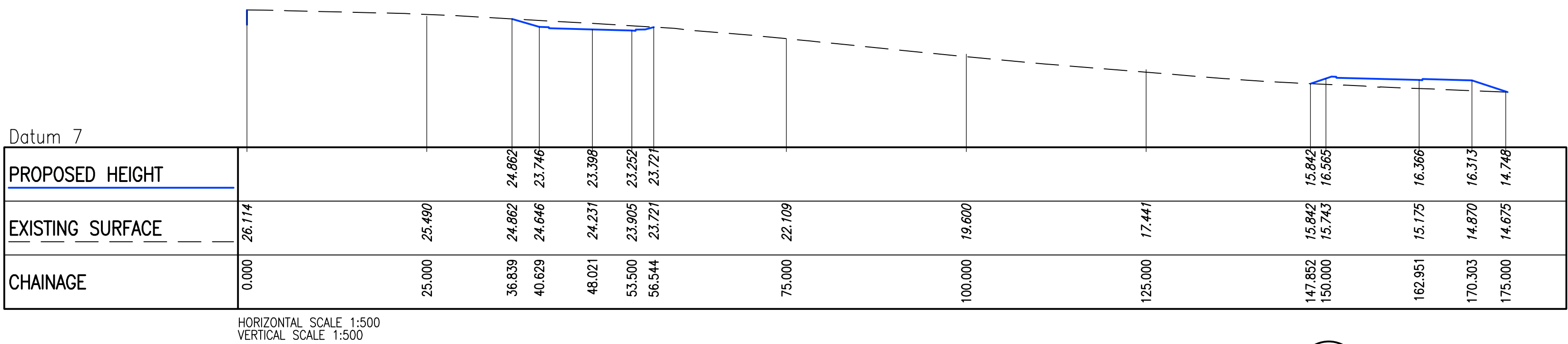
Date 06.05.2019	Drawn R.GILL
Scale at A1 AS SHOWN	Designer C.ROPE
	Design Checker C.ROPE
Job Number 19005	Approved C.ROPE



SECTION C



SECTION B



SECTION A

2	ISSUED FOR SSDA1	RG CR 03.05.19
1	ISSUED FOR SSDA1	RG CR 23.04.19
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 supplied or transferred by electronic means. You are responsible for verifying that any information or data supplied or transferred by electronic means reflects 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

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 3200
Fax: (02) 8246 3201
Email: sydney@robertbird.com.au
Web: www.robertbird.com
ACN 010 580 248

Client



Project
TWEED VALLEY HOSPITAL
771 CUDGEN ROAD, CUDGEN NSW

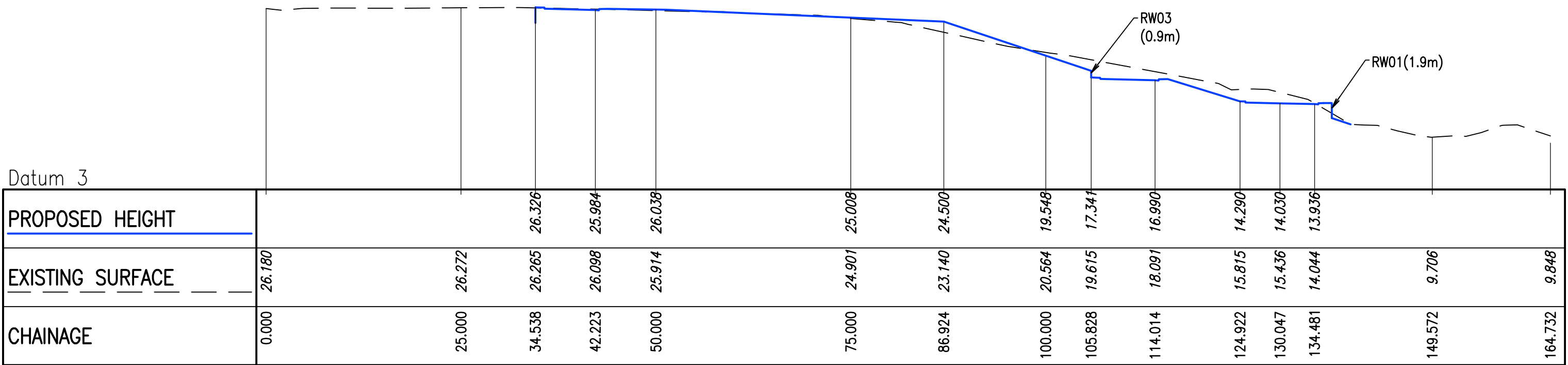
Title
**STAGE 1 EARLY AND ENABLING
WORKS CONSTRUCTION
LONGITUDINAL SECTION –
SHEET 1 OF 2**

Date 03.05.2019	Drawn R.GILL
Scale at A1 AS SHOWN	Designer C.ROPE
	Design Checker C.ROPE
Job Number 19005	Approved C.ROPE

NOT FOR CONSTRUCTION

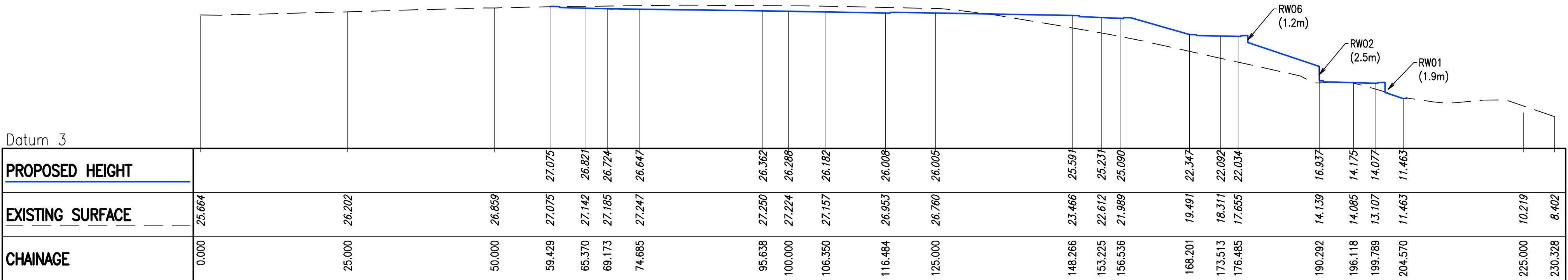
Drawing Number	Revision
----------------	----------

C-2-120 **1**



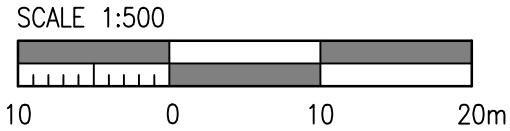
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500

SECTION **E**



HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500

SECTION **D**



2	ISSUED FOR SSDA1	RG CR 03.05.19
1	ISSUED FOR SSDA1	RG CR 23.04.19
Rev	Revision Description	By App Date

Disclaimer: Robert Bird Group Pty Ltd ACN 010 580 348 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

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 3200
Fax: (02) 8246 3201
Email: sydney@robertbird.com.au
Web: www.robertbird.com
ACN 010 580 348



Project
TWEED VALLEY HOSPITAL
771 CUDGEN ROAD, CUDGEN NSW

Title
STAGE 1 EARLY AND ENABLING WORKS CONSTRUCTION LONGITUDINAL SECTION – SHEET 2 OF 2

Date 03.05.2019	Drawn R.GILL
Scale at A1 AS SHOWN	Designer C.ROPE
	Design Checker C.ROPE
Job Number 19005	Approved C.ROPE

LEGEND

BASIN A CATCHMENT
(APPROX. 74500m²)

BASIN B CATCHMENT
(APPROX. 3300m²)

BASIN C CATCHMENT
(APPROX. 14500m²)

BASIN D CATCHMENT
(APPROX. 31500m²)

BYPASS CATCHMENT
(APPROX. 16100m²)

EXISTING SEDIMENT BASIN TO BE
RECONSTRUCTED AS BIODETENTION BASIN

STORMWATER PIPE

FIELD INLET PIT

SAG INLET PIT

KERB INLET PIT

FUTURE RAINWATER TANK FOR STORAGE
OF ROOF WATER – NOT STAGE 1 WORKS

FUTURE OIL SEPARATOR FOR HELIPAD
ROOF WATER – NOT STAGE 1 WORKS

LAND BOUNDARY

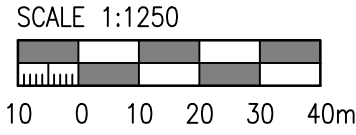
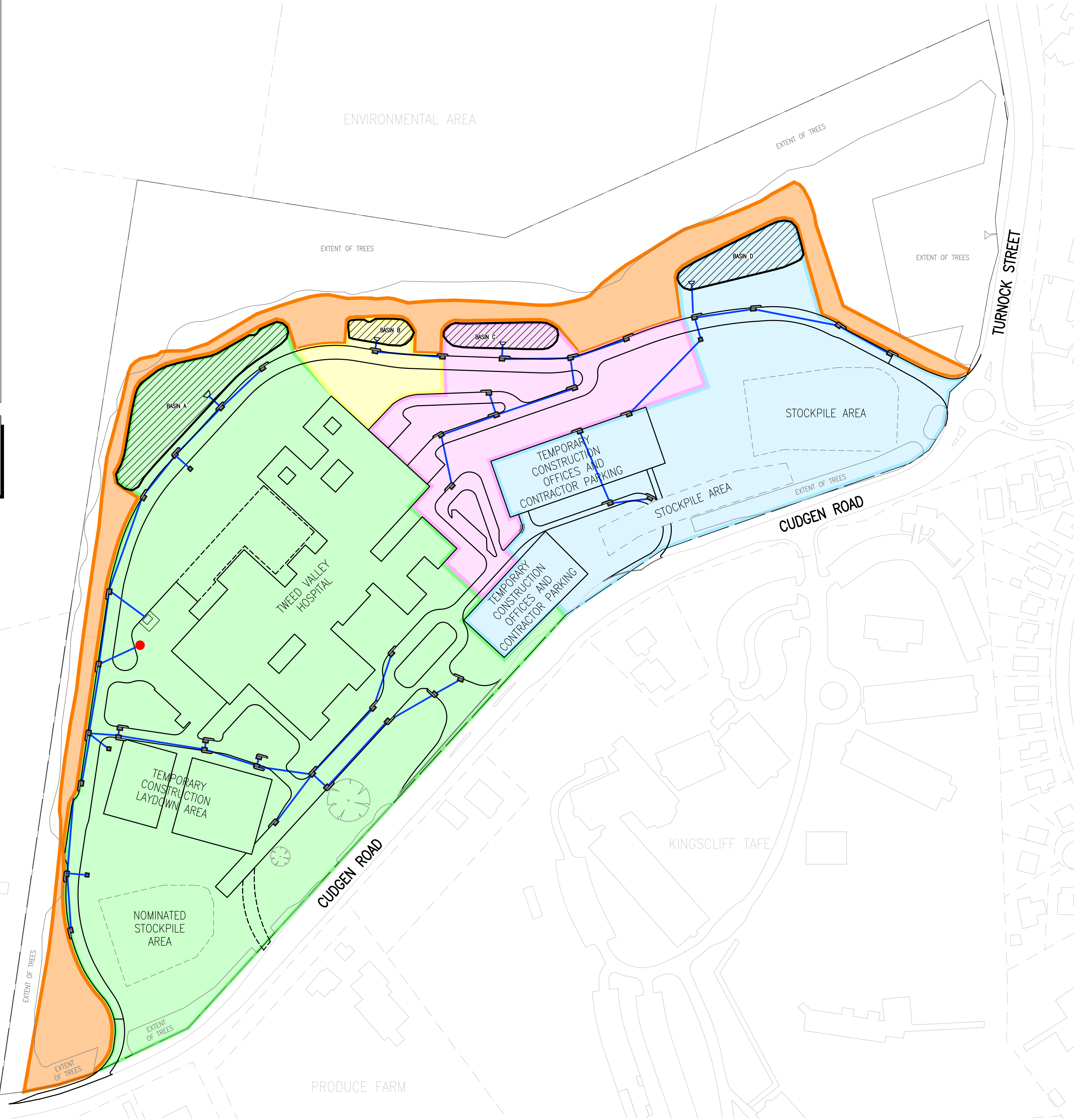
EXISTING SEDIMENT BASIN
(CONSTRUCTED AS PRELIMINARY WORKS)
TO BE MODIFIED TO BIODETENTION BASINS

NOTES

1. DETENTION BASINS TO BE SIZED TO ENSURE POST
DEVELOPMENT FLOW RATE NO GREATER THAN EXISTING
RUNOFF RATE IN 5YR ARI AND 100YR ARI STORM.

2. BIODETENTION TREATMENT TO BE SIZED TO ENSURE
COMPLIANCE WITH TWEED SHIRE COUNCIL DEVELOPMENT
DESIGN SPECIFICATION

BASIN SCHEDULE		
BASIN REFERENCE	BIODETENTION AREA (MIN.)	DETENTION VOLUME (MIN.)
A	300m²	3500m³
B	40m²	350m³
C	170m²	750m³
D	410m²	1600m³



3	ISSUED FOR SSDA1	RG	CR	06.05.19	
2	ISSUED FOR SSDA1	RG	CR	03.05.19	
1	ISSUED FOR SSDA1	RG	CR	23.04.19	
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 satisfies 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. 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 3200
Fax: (02) 8246 3201
Email: sydney@robertbird.com.au
Web: www.robertbird.com
ACN 010 580 248



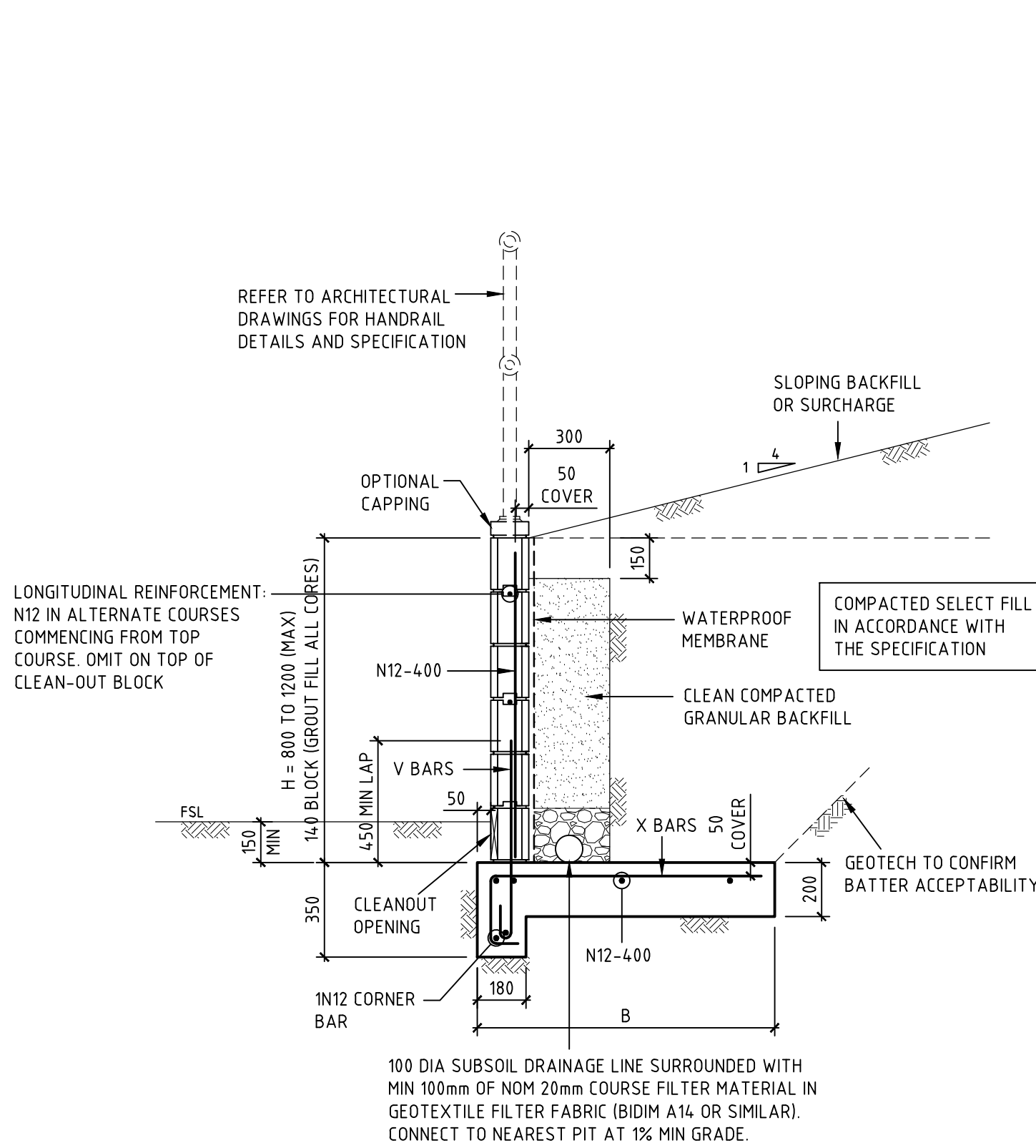
Project
TWEED VALLEY HOSPITAL
771 CUDGEN ROAD, CUDGEN NSW

Title
**STAGE 1 EARLY AND ENABLING
WORKS CONSTRUCTION
STORMWATER MANAGEMENT PLAN**

Date 06.05.2019 Scale at A1 AS SHOWN	Drawn R.GILL Designer C.ROPE Design Checker C.ROPE Approved C.ROPE
---	---

NOT FOR CONSTRUCTION

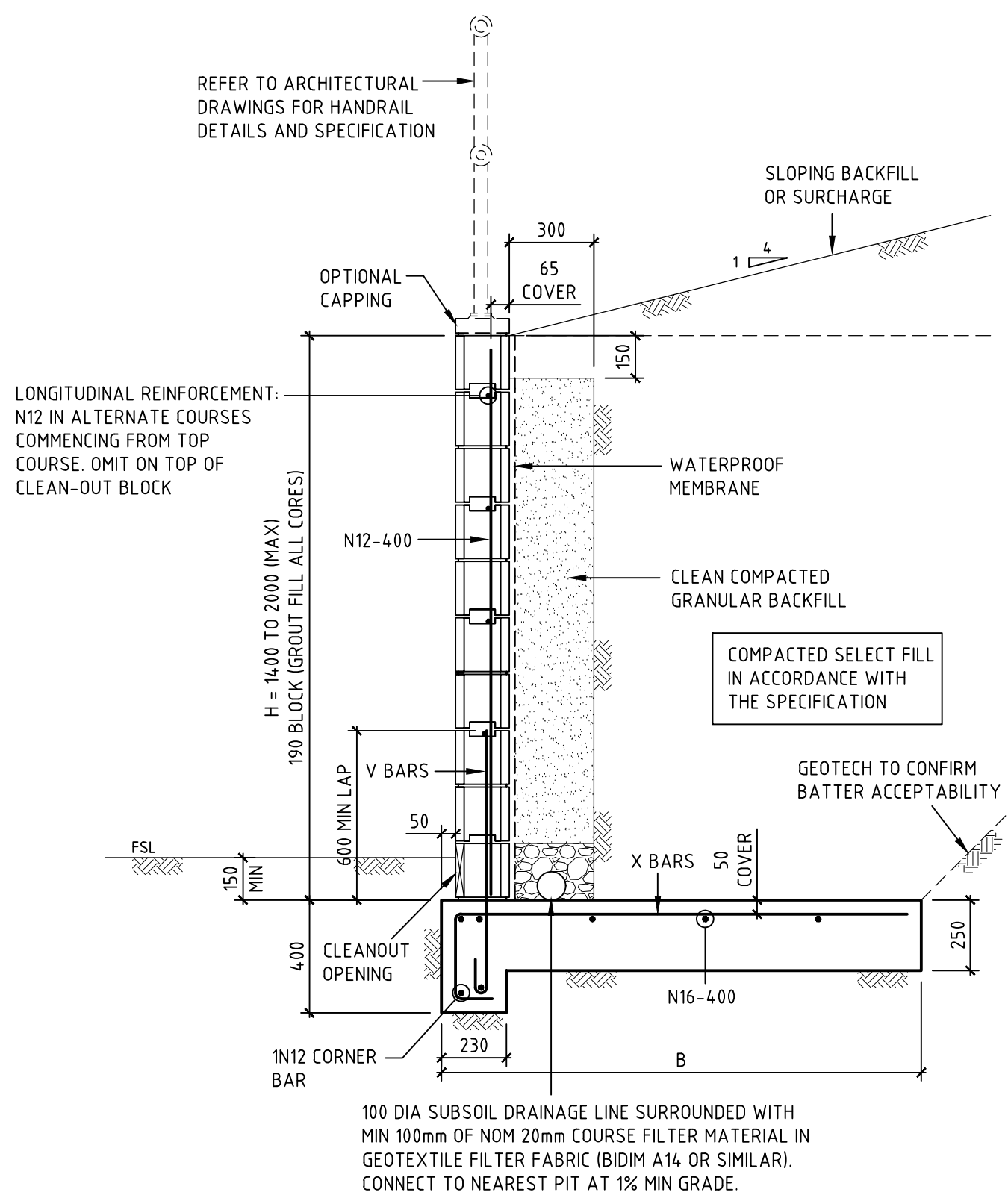
File: G:\Job\1074803 Work in Progress\02 Civil\01 Autocad\000 Series - Early Works\10748C-C055.dwg Plotted: 16.01.18 at 5:50 PM By: Dean Bowen



BLOCK RETAINING WALL (MAX 1200 HIGH)

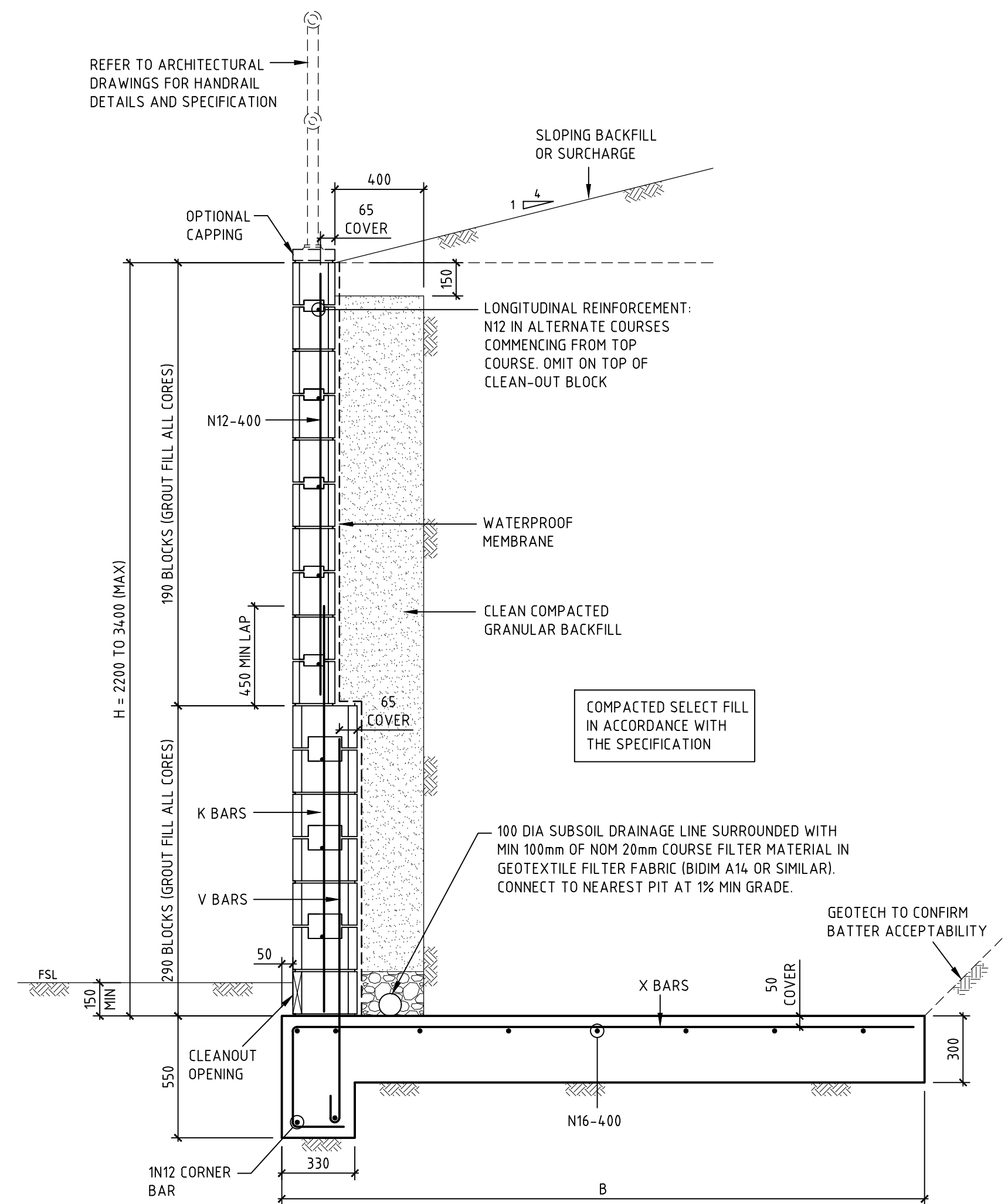
SCALE 1:20

NOTE: DESIGNER TO CHECK THE NEED FOR SHEAR KEY



BLOCK RETAINING WALL (MAX 2000 HIGH)

SCALE 1:20



BLOCK RETAINING WALL (MAX 3400 HIGH)

SCALE 1:20

BLOCK RETAINING WALL BASE TYPE 1

BLOCK RETAINING WALL BASE TYPE 1							
WALL HEIGHT				REINFORCEMENT		BASE DIMENSIONS	
TOTAL HEIGHT (mm) H	HEIGHT OF BLOCKWORK			X-BARS AND V-BARS	K-BARS	WIDTH, B (mm) WITH FOLLOWING BACKFILL CONDITIONS	
	150 SERIES	200 SERIES	300 SERIES			LEVEL	MAX 1:4 SLOPE
800	800	-	-	N12-400	-	800	1000
1000	1000	-	-	N12-400	-	1000	1200
1200	1200	-	-	N12-400	-	1100	1500
1400	-	1400	-	N12-400	-	1300	1700
1600	-	1600	-	N16-400	-	1400	2000
1800	-	1800	-	N16-400	-	1600	2200
2000	-	2000	-	N16-200	-	1700	2500
2200	-	1400	800	N16-400	N16-400	1900	2800
2400	-	1600	800	N16-400	N16-400	2000	3100
2600	-	1600	1000	N20-400	N20-400	2200	3300
2800	-	1800	1000	N20-400	N20-400	2400	3600
3000	-	2000	1000	N16-200	N16-200	2600	3900
3200	-	2000	1200	N20-200	N16-200	2800	4200
3400	-	2000	1400	N20-200	N16-200	2900	4500

COPYRIGHT
These drawings, plans and specifications and the copyright therein are the property of the Bonacci Group and must not be used, reproduced or copied wholly or in part without the written permission of the Bonacci Group.

All rights reserved.

Rev Description Date By App

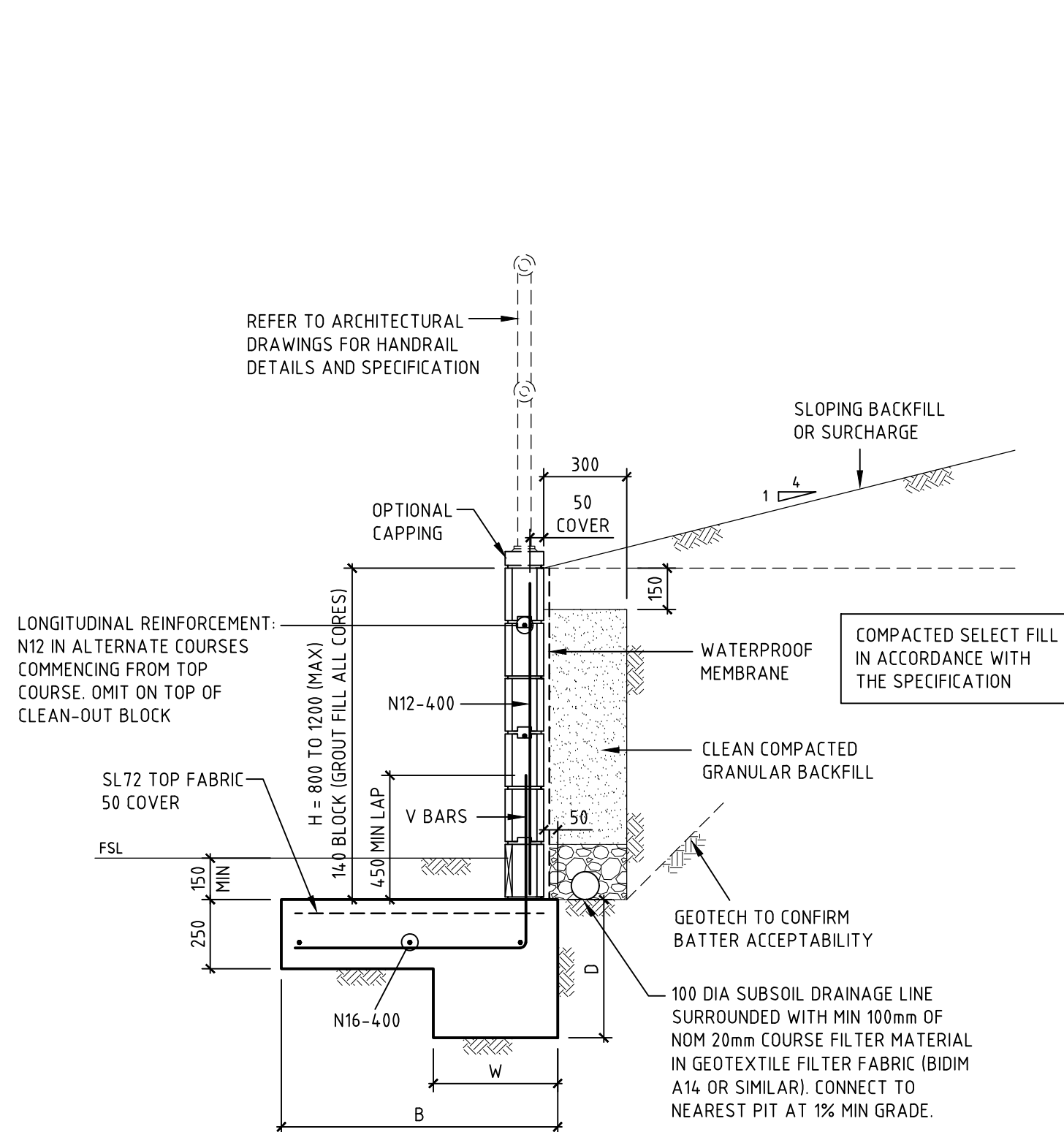
Rev Description Date By App

BONACCI
BONACCI GROUP Pty Ltd
ABN 42 060 332 345
Consulting Engineers, Structural - Civil - Infrastructure
Level 6, 37 York Street, Sydney, NSW 2000 Australia
Tel: +61 2 8247 8400 Fax: +61 2 8247 8444
sydney@bonaccigroup.com
www.bonaccigroup.com

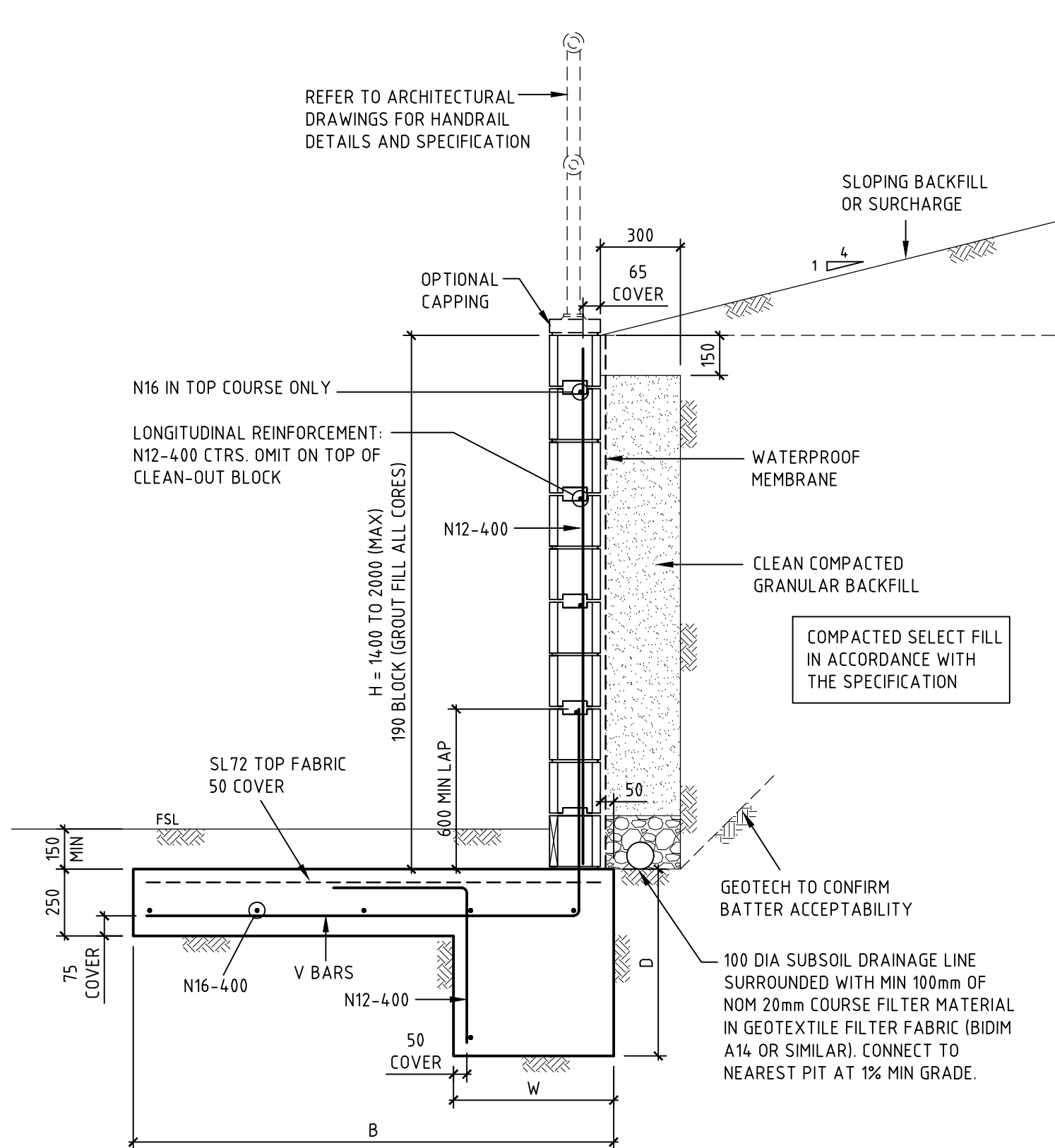
Project Name
TWEED VALLEY HOSPITAL
DEVELOPMENT, CUDGEN
STAGE 1 EARLY WORKS
Drawing Title
RETAINING WALL
DETAILS SHEET 1

DEVELOPMENT APPLICATION

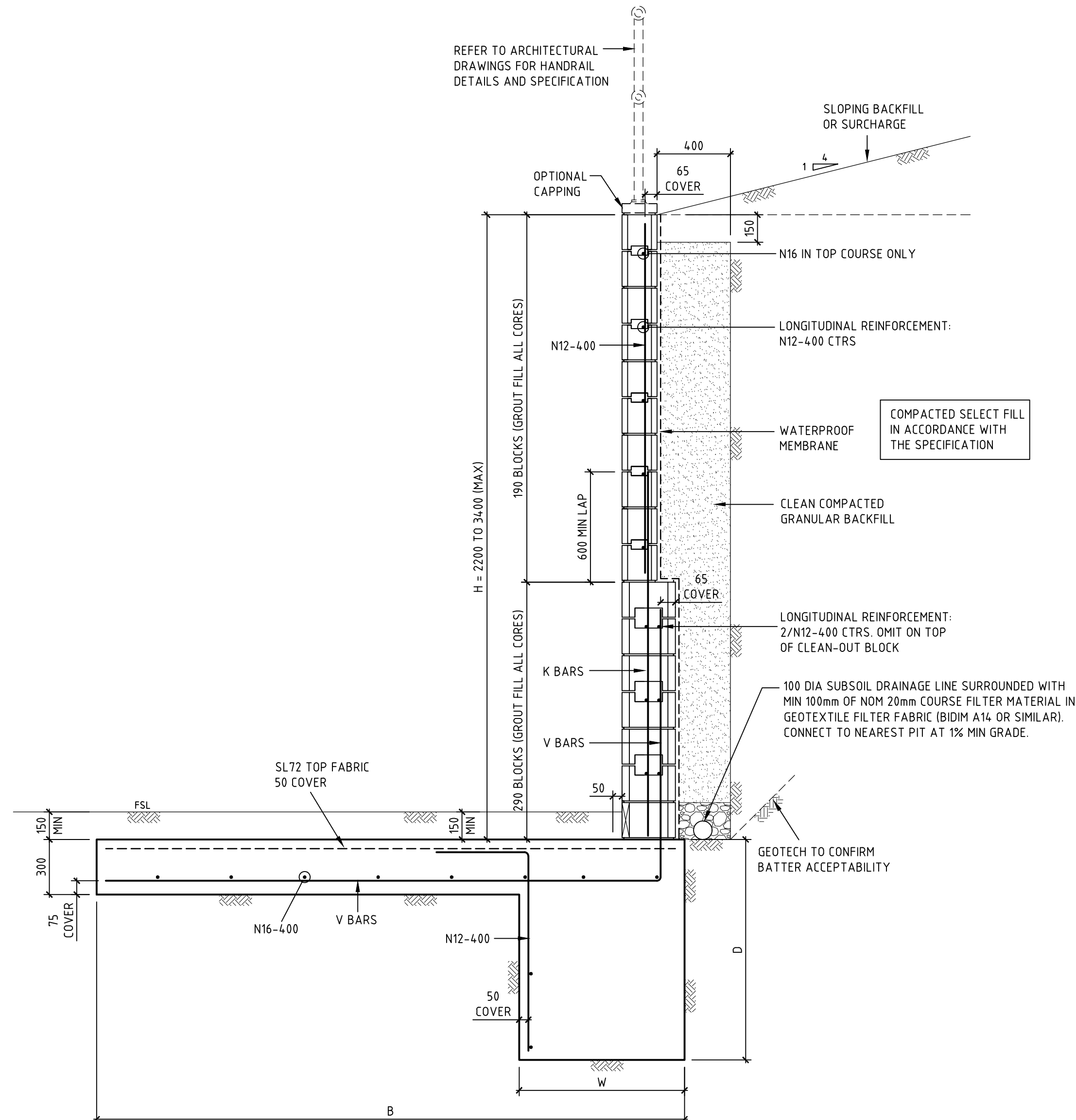
Designed PA
Drawn PA
Scale -
Date 03.09.18
Sheet A1
Project Director Approved Date
Project Ref 20 10748 01
Drawing No C055
Rev P2



BLOCK RETAINING WALL (MAX 1200 HIGH)
SCALE 1:20



BLOCK RETAINING WALL (MAX 2000 HIGH)
SCALE 1:20



BLOCK RETAINING WALL (MAX 3400 HIGH)
SCALE 1:20

BLOCK RETAINING WALL BASE TYPE 2

WALL HEIGHT				REINFORCEMENT		BASE DIMENSIONS				
TOTAL HEIGHT (mm) H	HEIGHT OF BLOCKWORK			X-BARS AND V-BARS	K-BARS	HEEL WIDTH (mm) W	LEVEL BACKFILL		MAX 1:4 SLOPING BACKFILL	
	150 SERIES	200 SERIES	300 SERIES				BASE WIDTH (mm) B	HEEL DEPTH (mm) D	BASE WIDTH (mm) B	HEEL DEPTH (mm) D
800	800	-	-	N12-400	-	450	600	500	800	500
1000	1000	-	-	N12-400	-	450	800	500	1000	500
1200	1200	-	-	N12-400	-	450	1000	500	1200	600
1400	-	1400	-	N16-400	-	450	1200	500	1400	600
1600	-	1600	-	N16-400	-	450	1400	600	1600	700
1800	-	1800	-	N16-400	-	450	1600	700	1800	800
2000	-	2000	-	N16-200	-	600	1800	700	2000	800
2200	-	1400	800	N16-400	N16-400	600	2000	800	2200	900
2400	-	1600	800	N16-400	N16-400	600	2200	900	2400	1000
2600	-	1600	1000	N20-400	N20-400	900	2400	900	2600	1000
2800	-	1800	1000	N20-400	N20-400	900	2600	900	2800	1100
3000	-	2000	1000	N16-200	N16-200	900	2800	1000	3000	1200
3200	-	2000	1200	N20-200	N16-200	900	3000	1100	3200	1300
3400	-	2000	1400	N20-200	N16-200	900	3200	1200	3400	1500

COPYRIGHT
These drawings, plans and specifications and the copyright therein are the property of the Bonacci Group and must not be used, reproduced or copied wholly or in part without the written permission of the Bonacci Group.

All rights reserved.

Rev Description Date By App

Rev Description Date By App

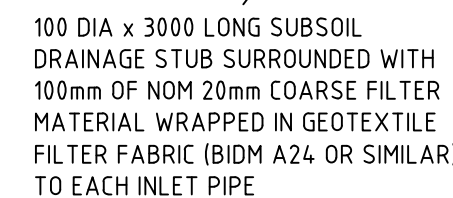
Rev Description Date By App

BONACCI
BONACCI GROUP Pty Ltd
ABN 42 060 332 345
Consulting Engineers, Structural - Civil - Infrastructure
Level 6, 37 York Street, Sydney, NSW 2000 Australia
Tel: +61 2 8247 8400 Fax: +61 2 8247 8444
sydney@bonaccigroup.com
www.bonaccigroup.com

Project Name
TWEED VALLEY HOSPITAL
DEVELOPMENT, CUDGEN
STAGE 1 EARLY WORKS
Drawing Title
RETAINING WALL
DETAILS SHEET 2

DEVELOPMENT APPLICATION

Designed PA
Drawn PN
Scale -
Date 03.09.18
Sheet A1
Project Director Approved Date North
Project Ref 20 10748 01
Drawing No C056
Rev P2



SCALE 1:20

1. CONCRETE TO HAVE A MIN. COMPRESSIVE STRENGTH F'_c OF 25 MPa AT 28 DAYS.
2. REINFORCEMENT NOT REQUIRED IF DEPTH OF PIT IS LESS THAN 100mm. PITS GREATER THAN 300mm DEEP TO HAVE WALL AND BASE 200mm THICK REINFORCED WITH N12-250 EACH WAY EACH FACE WITH CONCRETE STRENGTH $F'_c = 40$ MPa.
3. PROVIDE STEP IRONS AT MAX 350mm CTRS IF DEPTH OF PIT EXCEEDS 1200mm.
4. IF REINFORCING FABRIC IS TO BE USED REFER TO WALL AND CORNER DETAILS.
5. PRECAST PITS ARE TO GENERALLY COMPLY WITH THESE DETAILS.
6. PRECAST PIT MAY BE USED SUBJECT TO ENGINEERS APPROVAL.
7. ALL PITS TO BE LOCKABLE.
8. FINAL INTERNAL PIT DIMENSIONS ARE TO COMPLY WITH AS 3500.



REINFORCEMENT

SCALE 1:20

NOTE: DESIGNER TO VERIFY EXTENT OF DETAILING



SCALE 1:20



SECTION C -C

DRILL 30mm DIA HOLE x 120mm DEEP
AND EPOXY INTO WALL WITH EPOXY
MORTAR EQUAL TO EPIREZ 633 (NON
SAGE) - IN PRECAST PITS, DEPTH OF
EMBEDMENT IS TO BE IN ACCORDANCE
WITH PIT MANUFACTURER'S DETAILS



FRONT ELEVATION



SCALE 1:10



SCALE 1:10



SCALE 1:10



SCALE 1:10



SCALE 1:10

NOTE: SLOTTED RIGID PVC PIPE
AND FITTINGS WITHIN
DRAINAGE LAYER ONLY



SCALE 1:10

NOTE: SLOTTED RIGID PVC PIPE
AND FITTINGS MAY BE USED



SCALE 1:10



SCALE 1:10

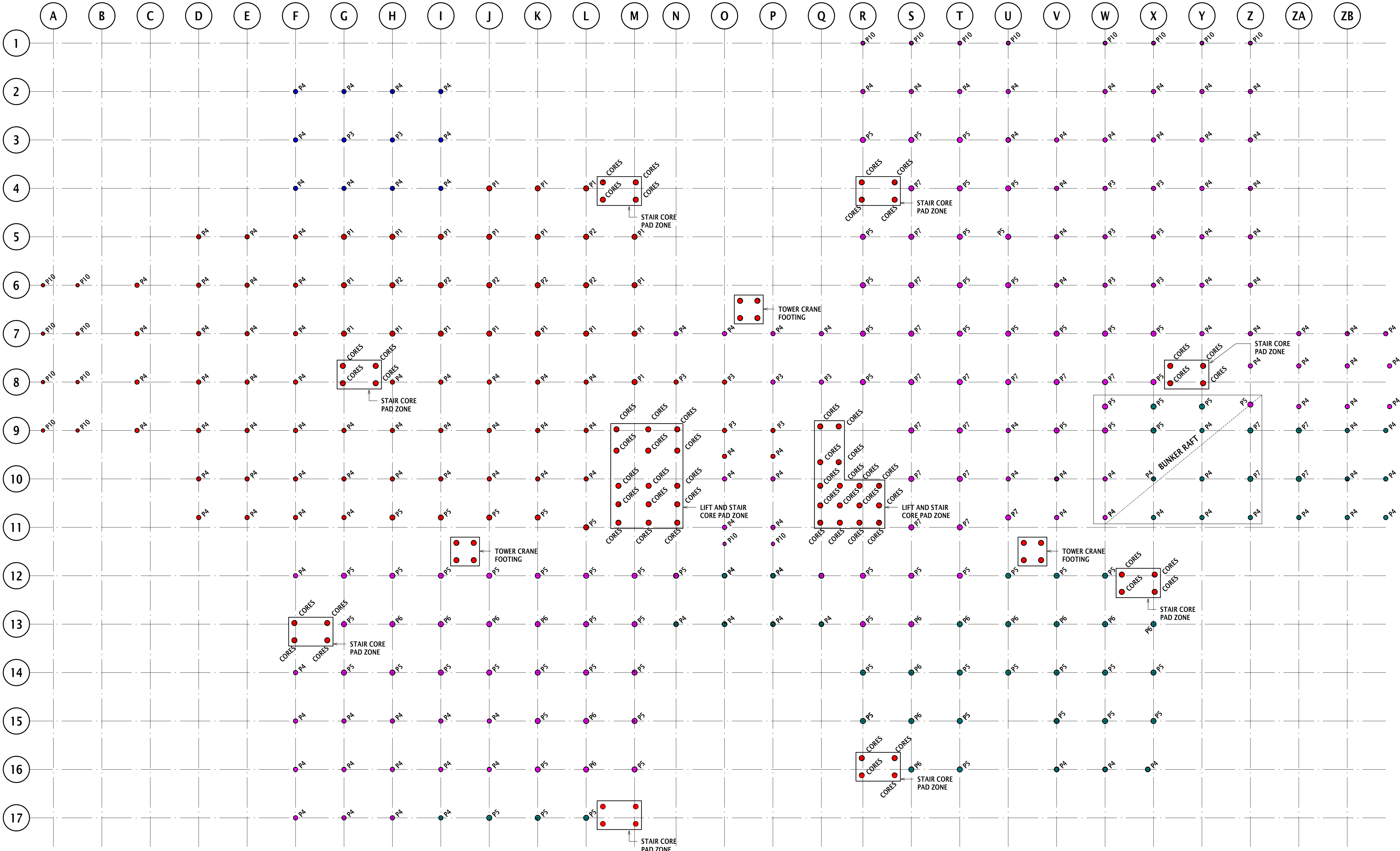
NOTE: AVOID RUNNING CONSTRUCTION EQUIPMENT OVER THE PIPES
UNTIL BACKFILL MATERIAL IS 300mm MIN. ABOVE CROWN OF PIPE



SCALE 1:10



SCALE 1:10



- LEGEND:
- DENOTES PILES AT BASEMENT 2
 - DENOTES PILES AT BASEMENT 1
 - DENOTES PILES AT LOWER GROUND
 - DENOTES PILES AT GROUND

PILE SCHEDULE			
TYPE	SIZE SQ/DIA	SWL	N°
CRANE	900	-	10000
P1	900	5000	6750
P2	900	7500	10125
P3	750	3500	4725
P4	750	3400	5100
P5	900	4500	6075
P6	900	6000	8100
P7	900	7000	9450
P10	600	2000	2700
CORES	900	-	10000

- NOTES :
- ALL LOADS ARE PRELIMINARY AND SUBJECT TO REVIEW.
 - STARTER BARS TO BE INSTALLED TO PILES FOR COLUMNS OVER.
 - PILE SIZES ARE PRELIMINARY AND SUBJECT TO REVIEW.

PRINT DRAWING
IN COLOUR

Rev	Revision Description	By	App	Date
P1	ISSUED FOR SSDA1	KP	SH	02.05.19

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

SCALE 1:1 1:2 1:3 1:4 1:5 1:6 1:7 1:8

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 caused which 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 3200
Fax: (02) 8246 3201
Email: sydney@robertbird.com.au
Web: www.robertbird.com
ACN 010 580 248

Client

Title
PILING LAYOUT

Project
TWEED VALLEY HOSPITAL

Scale at A1
1:350

Date
Feb 2019

Drawn
K.PETROVSKI

Designer
R.RAMACHANDRA

Design Checker
S.HAWDON

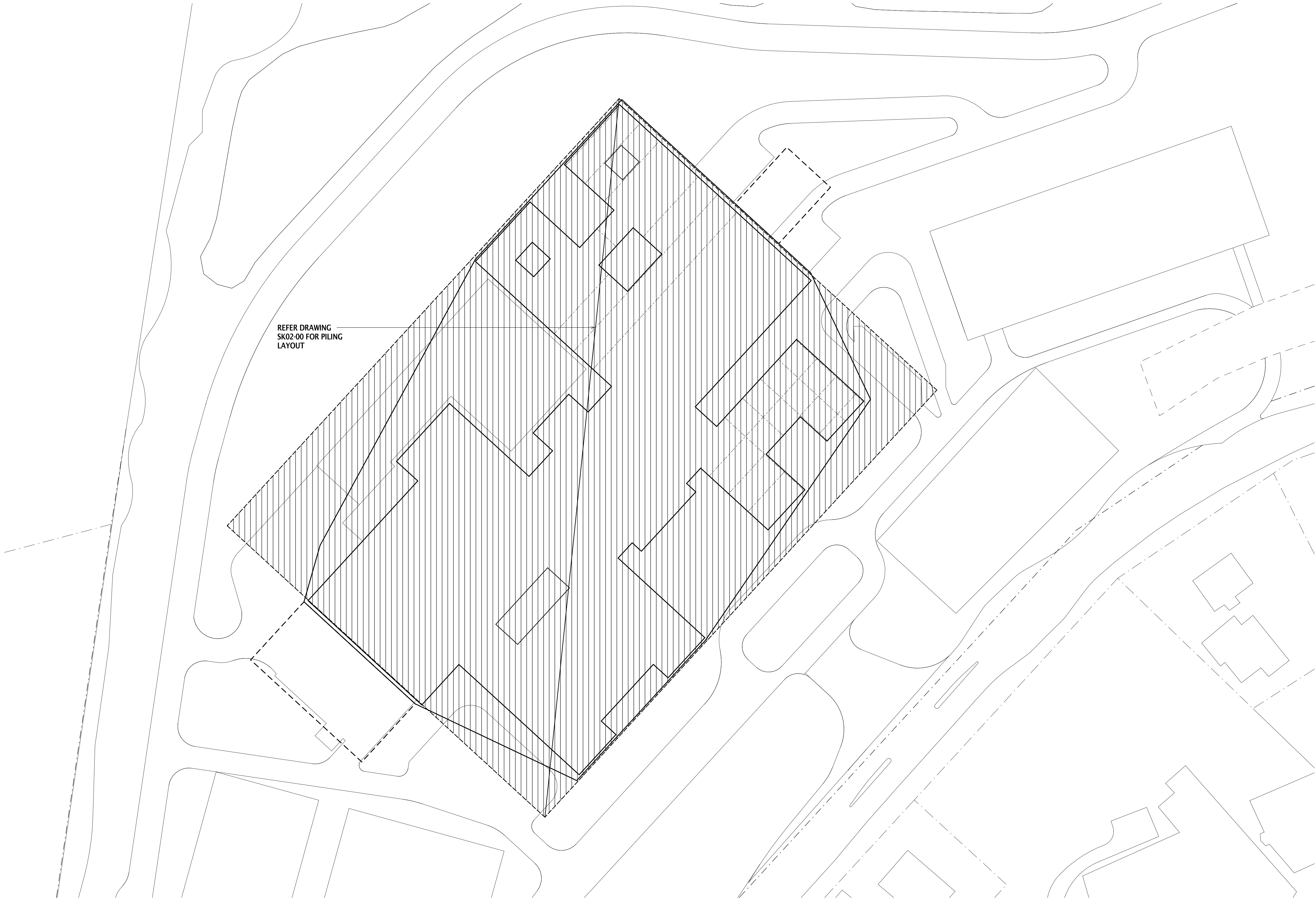
Approved
M.HARDING

Job Number
19005

NOT FOR CONSTRUCTION

Drawing Number
SK02-00

Revision
P1



FOUNDATION PLAN

Rev	Revision Description	By	App	Date
P1	ISSUED FOR SSDA1	KP	SH	02.05.19

Rev	Revision Description	By	App	Date

SCALE 1:1 1:2 1:3 1:4 1:5 1:6 1:7 1:8

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



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 3200
Fax: (02) 8246 3201
Email: sydney@robertbird.com.au
Web: www.robertbird.com
ACN 010 580 248

Client

Title
FOUNDATION PLAN

Project
TWEED VALLEY HOSPITAL

Scale at A1
1:600
Date
Apr 2019

Drawn
K.PETROVSKI
Designer
R.RAMACHANDRA

Design Checker
S.HAWDON
Approved
M.HARDING
Job Number
19005

NOT FOR CONSTRUCTION

Drawing Number	Revision
SK02-01	P1



NOTE:
ALL FOOTING CONCRETE TO BE 32 MPa MINIMUM U.N.O.

SK11-11 P1