

10 LOMAS LANE, NULKABA, N.S.W. 2325

CONCEPT CIVIL ENGINEERING PACKAGE



LOCALITY PLAN

DWG No.	DRAWING TITLE
DA-C01.01	COVER SHEET, DRAWING LIST AND LOCALITY PLAN
DA-C02.01	GENERAL ARRANGEMENT PLAN
DA-C03.01	CONCEPT EROSION AND SEDIMENT CONTROL PLAN - SHEET 1
DA-C03.02	CONCEPT EROSION AND SEDIMENT CONTROL PLAN - SHEET 2
DA-C03.03	CONCEPT EROSION AND SEDIMENT CONTROL PLAN - SHEET 3
DA-C03.04	CONCEPT EROSION AND SEDIMENT CONTROL PLAN - SHEET 4
DA-C03.05	EROSION AND SEDIMENT CONTROL DETAILS
DA-C03.06	SEDIMENT BASIN SIZING CALCULATIONS
DA-C04.01	CONCEPT EARTHWORKS PLAN - SHEET 1
DA-C04.02	CONCEPT EARTHWORKS PLAN - SHEET 2
DA-C04.11	EARTHWORKS SITE SECTIONS - SHEET 1
DA-C04.12	EARTHWORKS SITE SECTIONS - SHEET 2
DA-C04.13	EARTHWORKS SITE SECTIONS - SHEET 3
DA-C05.01	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN - SHEET 1
DA-C05.02	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN - SHEET 2
DA-C05.03	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN - SHEET 3
DA-C05.04	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN - SHEET 4
DA-C05.05	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN - SHEET 5
DA-C05.06	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN - SHEET 6
DA-C06.01	CONCEPT INTERSECTION DESIGN - NORTH ENTRANCE
DA-C06.02	CONCEPT INTERSECTION DESIGN - SOUTH ENTRANCE
DA-C06.03	PROPOSED LOMAS LANE UPGRADE
DA-C07.01	CIVIL DETAILS

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT		ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.	 NORTHROP Newcastle Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	PROJECT ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325	DRAWING TITLE CIVIL ENGINEERING PACKAGE COVER SHEET, DRAWING LIST AND LOCALITY PLAN	JOB NUMBER NL167397	
1	ISSUED FOR DISCUSSION	JW		RD	26.11.21	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION			ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.	 NORTHROP Newcastle Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325	CIVIL ENGINEERING PACKAGE	DRAWING NUMBER DA-C01.01	REVISION 5
2	ISSUED FOR APPROVAL	GR	CP	GW	14.12.21									
3	ISSUED FOR APPROVAL	JR	CP	GW	14.01.22									
4	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22									
5	ISSUED FOR APPROVAL	CA	CP	GW	06.06.24									
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED						THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD	NOT TO SCALE							
DRAWING SHEET SIZE - A1														

VERIFIER: C.PIPER

JOB MANAGER: C.PIPER

DESIGNED: R.DIERCKE/G.WOOD

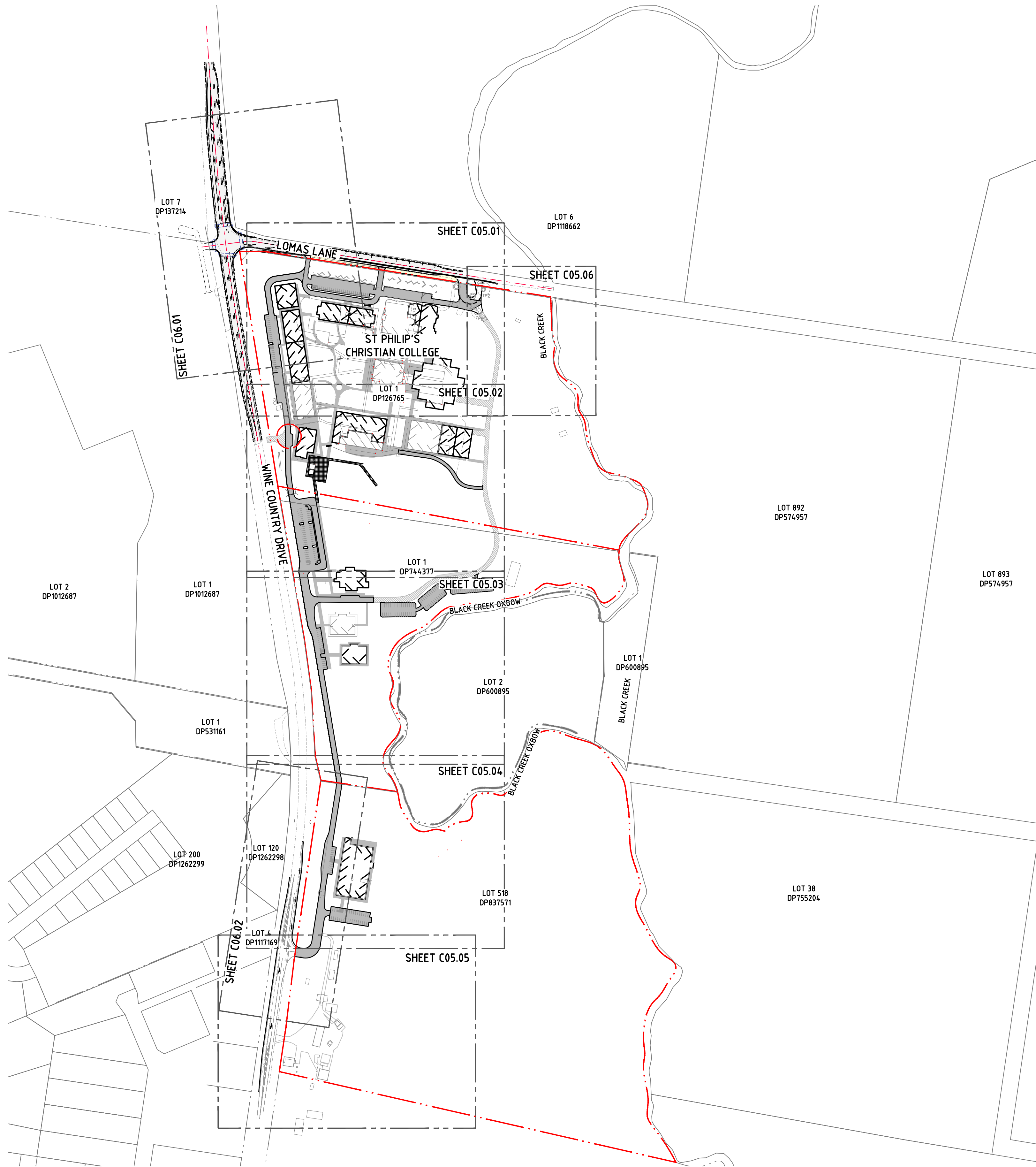
DRAWN: R.DIERCKE

VERIFIER: C PIPER

JOB MANAGER: C PIPER

DESIGNED: R DIERCKE/G WOOD

DRAWN: R DIERCKE



LEGEND	
	SITE BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	CADASTRE BOUNDARY LINES
	EASEMENT LINE

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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
3	ISSUED FOR APPROVAL	JR	CP	GW	14.01.22
4	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22
5	ISSUED FOR APPROVAL	RK	CP	GW	06.10.22
6	ISSUED FOR APPROVAL	CA	CP	GW	6.06.24
7	ISSUED FOR APPROVAL	JR	CP	LJ	11.02.25
8	ISSUED FOR APPROVAL	EW	CP	CP	20.03.25

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SCALE 1:2000@A1	

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PROJECT	ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325
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DRAWING TITLE	CIVIL ENGINEERING PACKAGE GENERAL ARRANGEMENT PLAN
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JOB NUMBER	NL167397
DRAWING NUMBER	DA-C02.01
REVISION	8
DRAWING SHEET SIZE ± A1	

VERIFIER: C PIPER

JOB MANAGER: C PIPER

DESIGNED: R DIERCKE / G WOOD

DRAWN: R DIERCKE

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DP 531161

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR DISCUSSION	GW		RD	26.11.21
2	ISSUED FOR APPROVAL	JR	CP	GW	16.12.21
3	ISSUED FOR APPROVAL	JR	CP	GW	16.01.22
4	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22
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	0 5 10 15 20 25m

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PROJECT	ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325
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DRAWING TITLE	CIVIL ENGINEERING PACKAGE
CONCEPT EROSION AND SEDIMENT CONTROL PLAN - SHEET 3	

JOB NUMBER	NL167397
DRAWING NUMBER	DA-C03.03
REVISION	5
DRAWING SHEET SIZE = A1	

LEGEND	
	SITE BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	EASEMENT LINE
	PROPOSED/EXISTING BUILDING NAME AND FINISHED FLOOR LEVEL, m AHD
	EXISTING CONTOURS @ 0.25m INTERVALS
	SEDIMENT FENCE
	DIVERSION DRAIN (CLEAN)
	DIVERSION DRAIN (DIRTY)
	STABILISED SITE ACCESS (GRATED)
	STOCKPILE
	SEDIMENT BASIN AND NUMBER
	DIVERSION BERM
	APPROXIMATE AREA OF DISTURBANCE
	DIRECTION OF GRADE IN NATURAL SURFACE

CONSTRUCTION SEQUENCE	
1.	CONSTRUCT STABILISED SITE ACCESS.
2.	CONSTRUCT SEDIMENT FENCE AND CUT DRAINS TO MEET THE REQUIREMENTS OF THE SEDIMENT AND EROSION CONTROL PLAN AND CESSNOCK CITY COUNCIL'S REQUIREMENTS.
3.	CONSTRUCT SEDIMENT BASIN.
4.	INSTALL DIRTY WATER DIVERSION SWALES TO DIRECT FLOW TO SEDIMENT BASIN.
5.	CLEAR AND STRIP THE WORK AREAS. MINIMISE THE DAMAGE TO GRASS AND LOW GROUND COVER OF NON-DISTURBED AREAS.
6.	UNDERTAKE BULK EARTHWORKS.
7.	INSTALL SEDIMENT CONTROLS AS REQUIRED AROUND STORMWATER INFRASTRUCTURE AS INSTALLED.
8.	PROGRESSIVELY REHABILITATE SITE.
9.	REMOVE SEDIMENT CONTROLS ONCE SITE IS STABILISED.

NOTES	
1.	PROVIDE GEOTEXTILE INLET FILTERS OR EQUIVALENT AROUND ALL GRATED INLET PITS TO PREVENT SEDIMENT-LADEN RUNOFF ENTERING STORMWATER SYSTEM (TYPICAL). CONSTRUCT IN ACCORDANCE WITH THE DETAIL SD6-12 OF THE BLUE BOOK.
2.	DIRECT AS MUCH RUNOFF FROM DISTURBANCE AREAS TO SITE BASINS AS LEVELS ALLOW. FOR AREAS THAT CANNOT BE DIRECTED TO SITE SEDIMENT BASINS, SEDIMENT FENCE TO BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE DISTURBANCE AREA AND THE DISTURBANCE ARE STABILISED ASAP TO MINIMISE EROSION POTENTIAL.

REFER TO DA-C03.06 FOR SEDIMENT BASIN SIZING CALCULATIONS
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NOT FOR CONSTRUCTION

VERIFIER: C PIPER

JOB MANAGER: C PIPER

DESIGNED: R DIERCKE / G WOOD

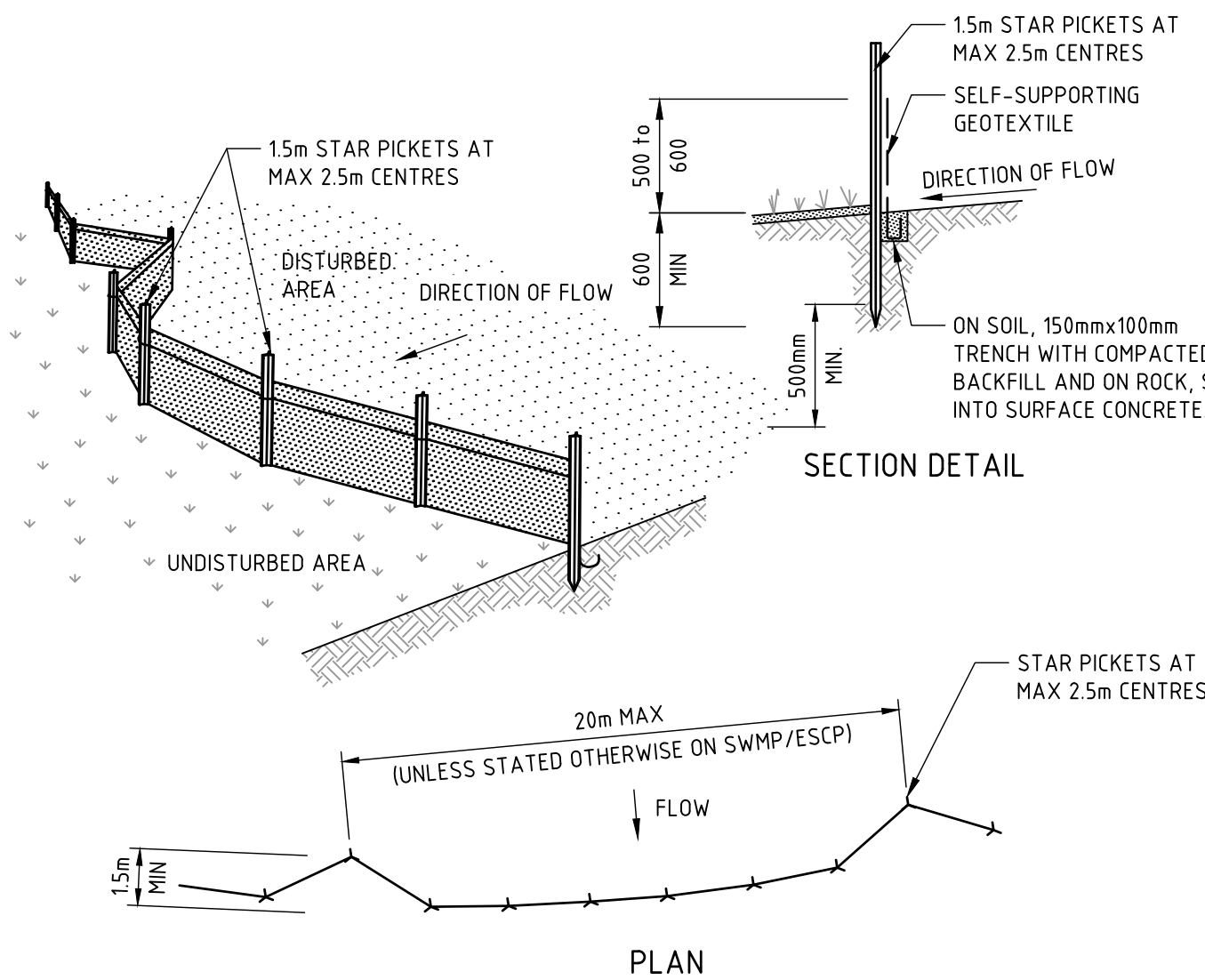
DRAWN: R DIERCKE

EROSION AND SEDIMENTATION CONTROL NOTES

- ALL EROSION AND SEDIMENTATION CONTROL MEASURES MUST BE APPROPRIATE FOR THE SEDIMENT TYPE(S) OF THE SOILS ON-SITE, IN ACCORDANCE WITH THE 'BLUE BOOK' (MANAGING URBAN STORMWATER – SOILS AND CONSTRUCTION, LANDCOM, 2004), OR OTHER CURRENT RECOGNISED INDUSTRY STANDARDS FOR EROSION AND SEDIMENT CONTROL FOR AUSTRALIAN CONDITIONS. THIS INCLUDES SEDIMENT TRAPS AND LINING OF CHANNELS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION AND SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS AND SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ALL MAINTENANCE, CLEANING AND BREACHES. THIS RECORD SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE PRINCIPAL CERTIFYING AUTHORITY AND THE SUPERINTENDENT DURING NORMAL WORKING HOURS.
- INSTALL SEDIMENT PROTECTION FILTERS ON ALL NEW AND EXISTING STORMWATER INLET PITS IN ACCORDANCE WITH EITHER THE MESH AND GRAVEL INLET FILTER DETAIL, SD6-11 OR THE GEOTEXTILE INLET FILTER DETAIL, SD6-12 OF THE 'BLUE BOOK'.
- ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.
- INSTALL SEDIMENT FENCING, OR OTHER SEDIMENT CONTROL DEVICES, AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT OR APPROPRIATE COUNCIL OFFICER.
- ALL TRENCHES INCLUDING ALL SERVICE TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAYS WORK.
- THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB & GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION.
- ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ON-SITE AND SPREAD/STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.
- STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE SPREAD ON-SITE AS DIRECTED BY THE SUPERINTENDENT OR REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.
- CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE).
- ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH. PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.
- PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.
- ONCE CUT/FILL OPERATIONS HAVE BEEN FINALIZED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.

BASIN MANAGEMENT NOTES

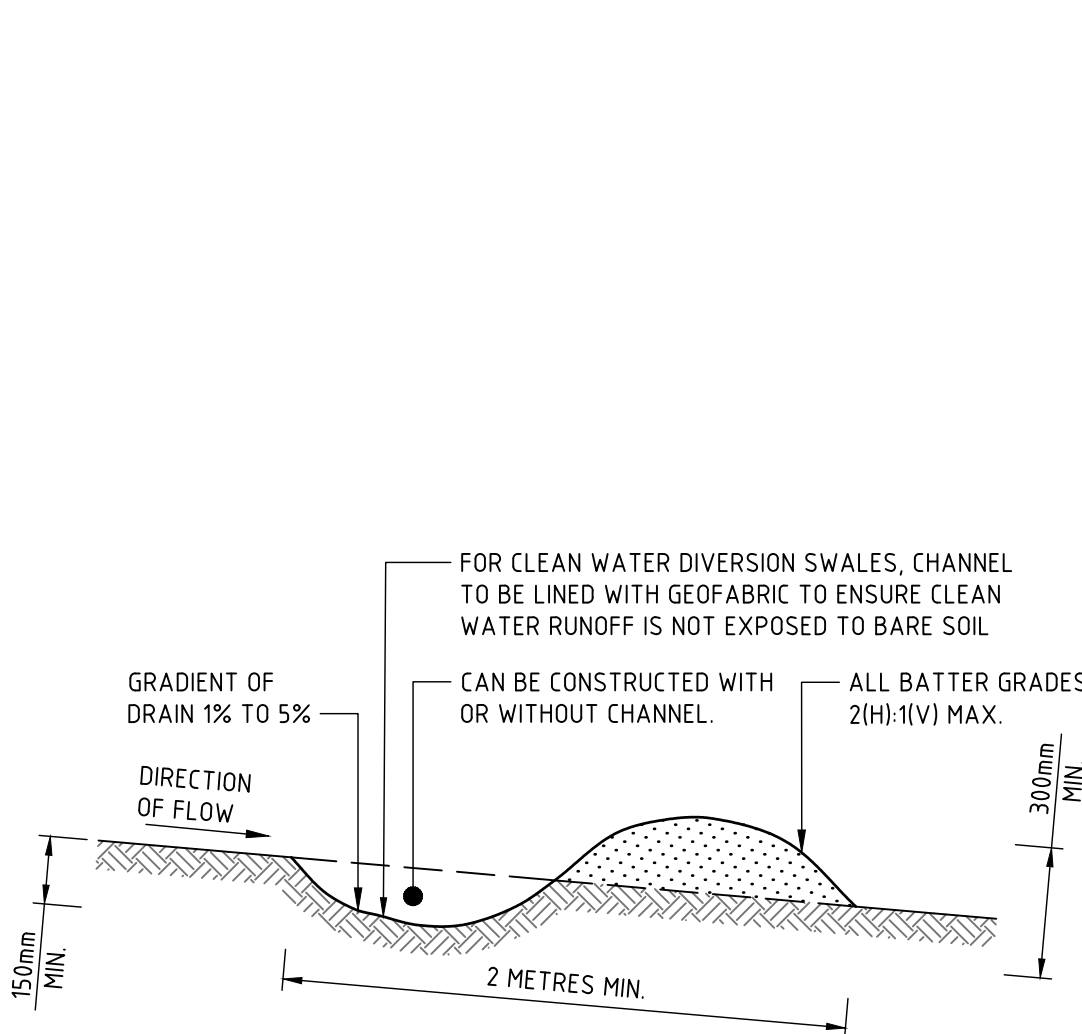
- PRIOR TO ANY FORECAST WEATHER EVENT, LIKELY TO RESULT IN SEDIMENT LADEN RUNOFF ON THE SITE, ANY EXISTING DETENTION BASINS/TRAPS SHALL BE DEWATERED TO PROVIDE SUFFICIENT CAPACITY TO CAPTURE SEDIMENT LADEN WATER FROM THE SITE.
- ANY SEDIMENT LADEN WATER CAPTURED ON-SITE MUST BE TREATED TO ENSURE IT WILL ACHIEVE COUNCIL'S WATER QUALITY OBJECTIVES PRIOR TO ITS RELEASE FROM SITE. A SAMPLE OF THE RELEASED TREATED WATER MUST BE KEPT ON-SITE IN A CLEAR CONTAINER WITH THE SAMPLE DATE RECORDED.
- NO ALUMINIUM BASED PRODUCTS MAY BE USED TO TREAT TURBID WATER (FLOCCULATING/COAGULANTS) ON-SITE WITHOUT THE PRIOR WRITTEN PERMISSION FROM AN APPROPRIATE COUNCIL OFFICER. THE APPLICANT MUST HAVE DEMONSTRATED ABILITY TO USE SUCH PRODUCTS CORRECTLY AND WITHOUT ENVIRONMENTAL HARM PRIOR TO ANY APPROVAL.
- THE CHEMICAL/AGENT (FLOCCULATING/COAGULANTS) USED IN TYPE D AND TYPE F BASINS TO TREAT TURBID WATER CAPTURED IN THE BASIN MUST BE APPLIED IN CONCENTRATIONS SUFFICIENT TO ACHIEVE COUNCIL'S WATER QUALITY OBJECTIVES (TSS < 50mg/L, TURBIDITY < 60 NTU, 6.5 < pH < 8.5) WITHIN THE 5-DAY RAINFALL DEPTH USED TO CALCULATE THE CAPACITY OF THE BASIN, AFTER A RAINFALL EVENT.
- ALL MANUFACTURERS INSTRUCTIONS MUST BE FOLLOWED FOR THE USE OF ANY CHEMICALS/AGENTS USED ON-SITE, EXCEPT WHERE APPROVED BY THE RESPONSIBLE PERSON OR AN APPROPRIATE COUNCIL OFFICER.
- SUFFICIENT QUANTITIES OF CHEMICALS/AGENTS TO TREAT TURBID WATER (FLOCCULATING/COAGULANTS) MUST BE PLACED SUCH THAT WATER ENTERING THE BASINS/SEDIMENT TRAP MIXES WITH THE CHEMICALS/AGENTS AND IS CARRIED INTO THE BASIN/TRAP.
- ANY BASIN MUST BE DEWATERED AS SOON AS PRACTICAL, ONCE WATER CAPTURED IN THE BASIN ACHIEVES COUNCIL'S WATER QUALITY OBJECTIVES.
- INSPECT THE SEDIMENT BASINS AFTER EACH RAINFALL EVENT AND/OR WEEKLY. ENSURE THAT ALL SEDIMENT IS REMOVED ONCE THE SEDIMENT STORAGE ZONE IS FULL. ENSURE THAT OUTLET AND EMERGENCY SPILLWAY WORKS ARE MAINTAINED IN A FULLY OPERATIONAL CONDITION AT ALL TIMES.



CONSTRUCTION NOTES

- CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
- CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
- DRIVE 15 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
- FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
- JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
- BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE (SD 6-8)

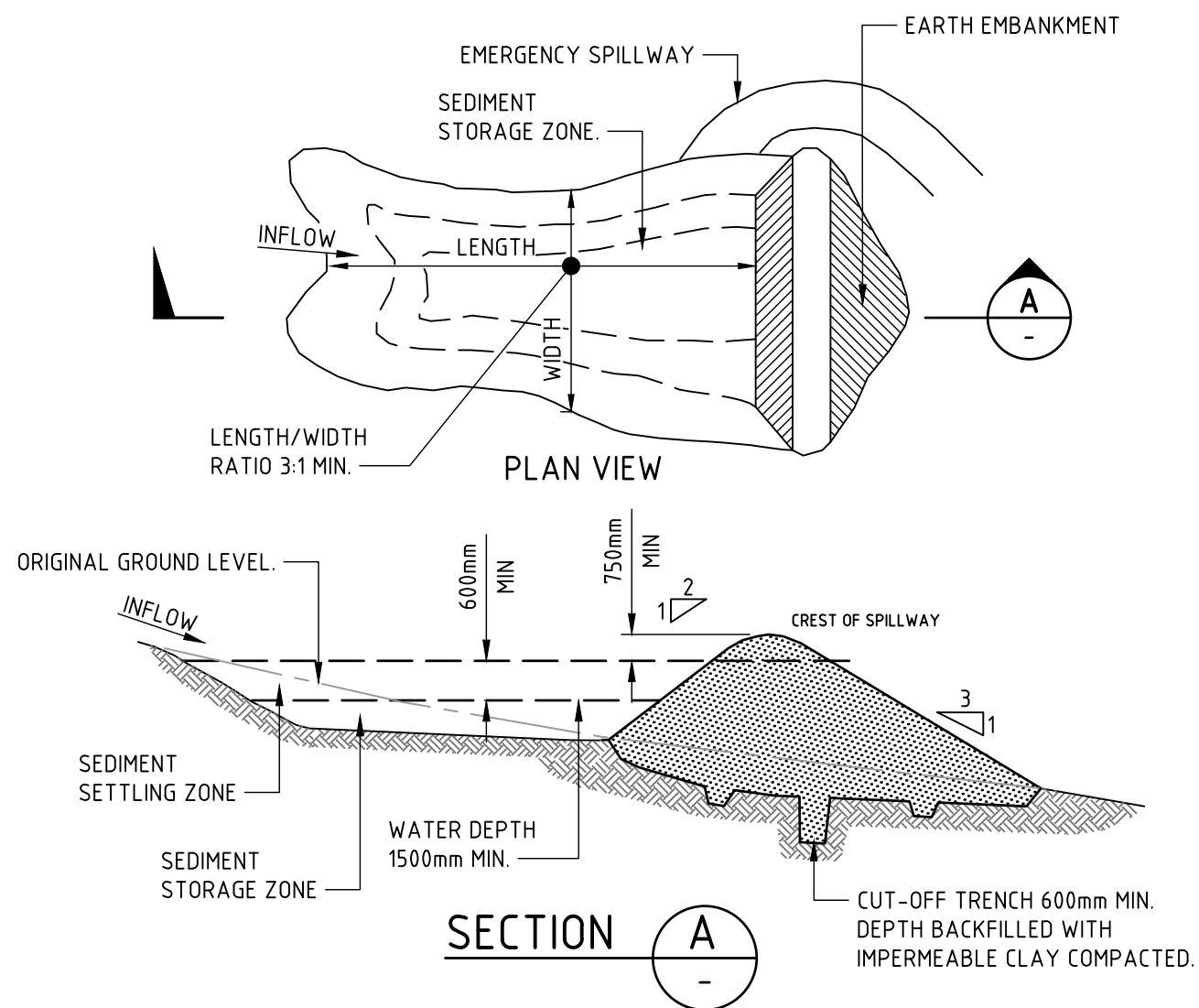


CONSTRUCTION NOTES

- BUILD WITH GRADIENTS BETWEEN 1 AND 5 PERCENT.
- AVOID REMOVING TREES AND SHRUBS IF POSSIBLE – WORK AROUND THEM.
- ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
- BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPE.
- ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
- COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAXIMUM UPSLOPE LENGTH IS 80 METRES.

EARTH BANK – LOW FLOW (SD 5-5)

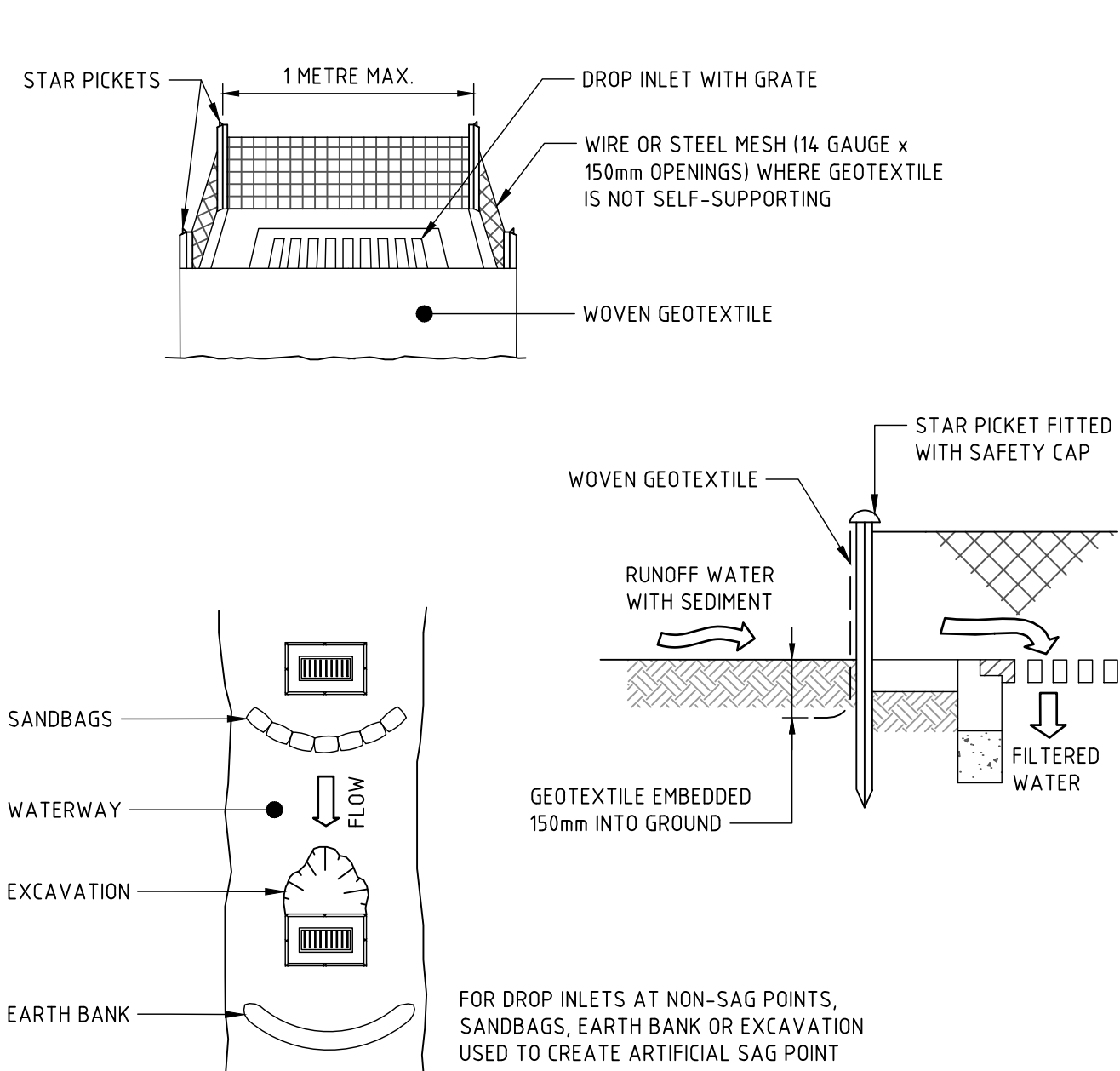


CONSTRUCTION NOTES

- REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
- CONSTRUCT A CUT-OFF TRENCH 500mm DEEP AND 1200mm WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
- MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95 PER CENT STANDARD PROCTOR DENSITY.
- SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
- PREPARE THE SITE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100mm TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
- SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
- CONSTRUCT THE EMERGENCY SPILLWAY.
- REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

(APPLIES TO 'TYPE D' AND 'TYPE F' SOILS ONLY)

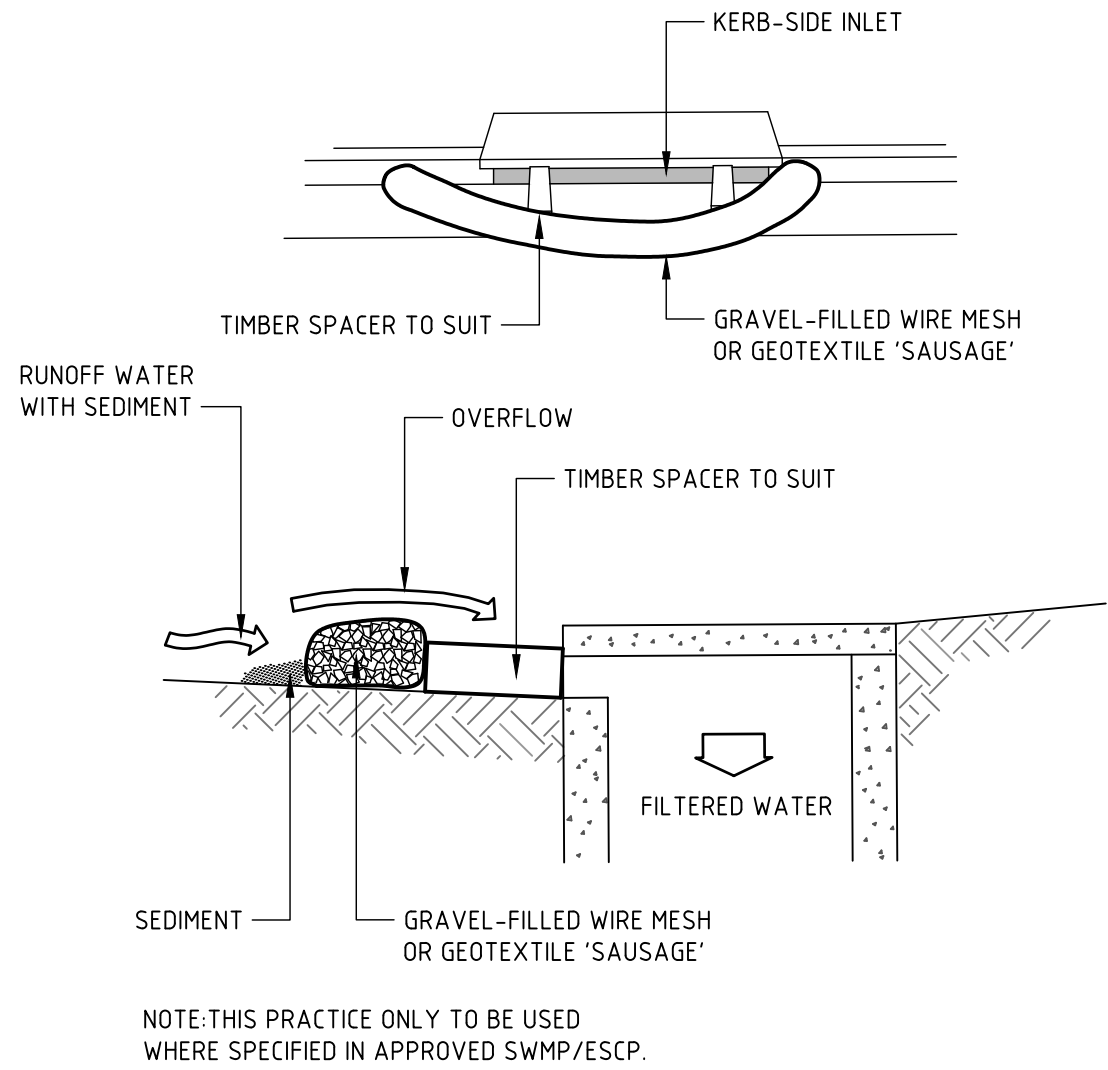
EARTH BASIN – WET (SD 6-4)



CONSTRUCTION NOTES

- FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
- FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
- IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
- DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

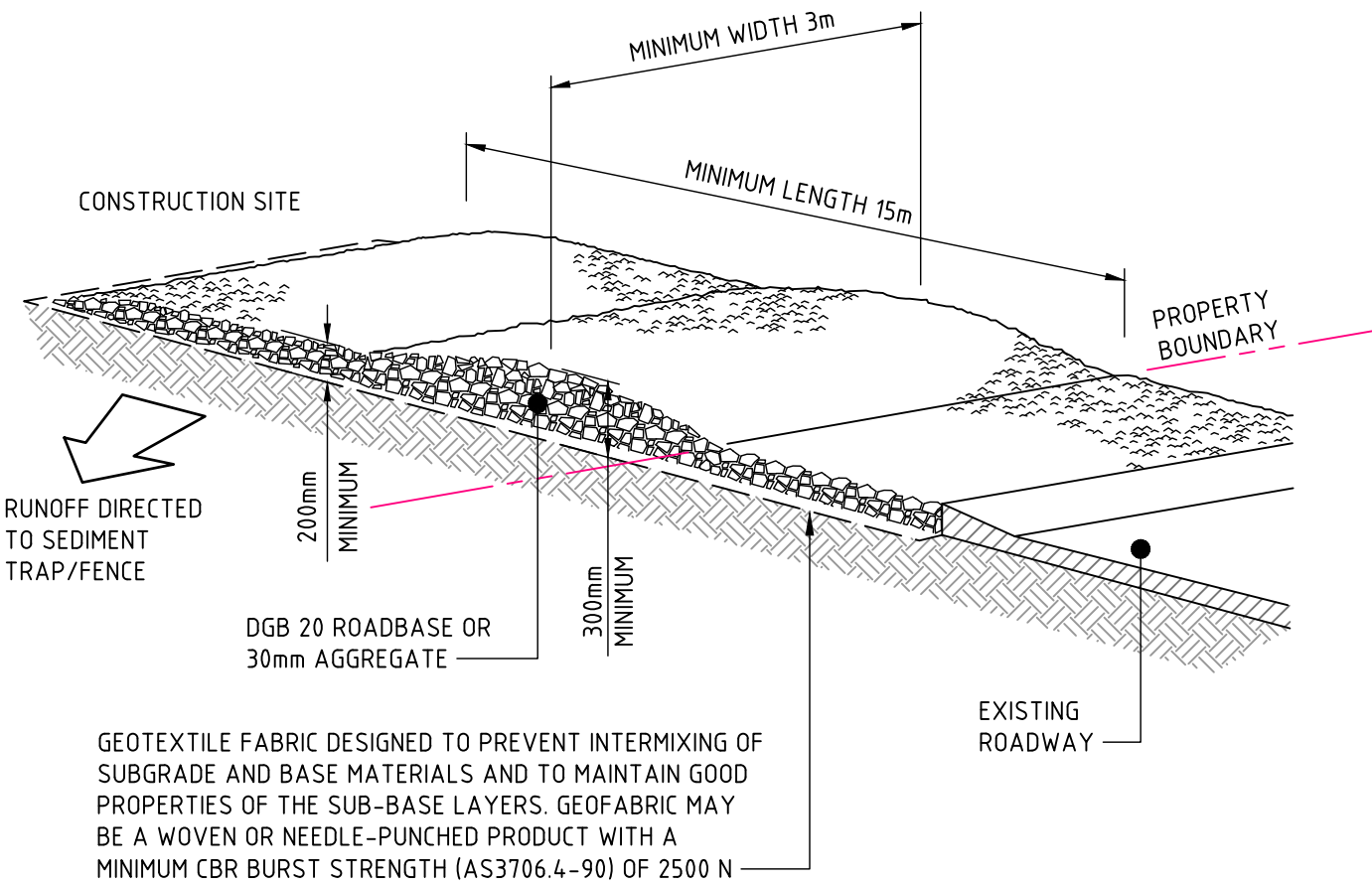
GEOTEXTILE INLET FILTER (SD 6-12)



CONSTRUCTION NOTES

- INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
- FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
- FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
- PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
- FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
- SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

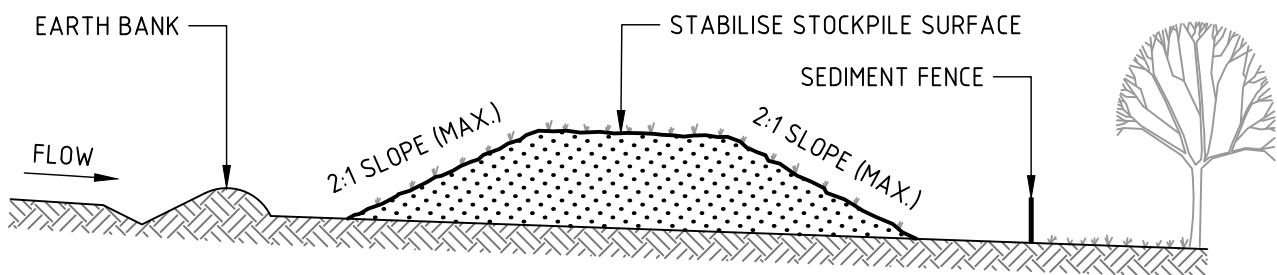
MESH AND GRAVEL INLET FILTER (SD 6-11)



CONSTRUCTION NOTES

- STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
- COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
- CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
- ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
- WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

STABILISED SITE ACCESS (SD 6-14)



CONSTRUCTION NOTES

- PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
- CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
- WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
- WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
- CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

STOCKPILES (SD 4-1)

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						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD	NOT TO SCALE			DRAWING SHEET SIZE = A1			

THE SITE IS LOCATED WITHIN THE BRANXTON SOIL LANDSCAPE AND PRIMARILY CONSISTS OF SANDY AND SILTY CLAYS (AS PER THE SITE SPECIFIC GEOTECHNICAL INVESTIGATION).

SEDIMENT BASIN SIZING		
CONSTRAINT	VALUE	UNITS
CV = VOLUMETRIC RUNOFF COEFFICIENT	0.64	
R = 5 DAY, 85 TH PERCENTILE RAINFALL	31.0	mm
A = CATCHMENT AREA	1.48	ha
SETTLING ZONE VOLUME (10xCVxRxA)	294	m ³
A2 = DISTURBED CATCHMENT AREA	1.48	ha
SEDIMENT STORAGE VOLUME (0.17xSOIL LOSSxA2)	22	m ³
TOTAL BASIN VOLUME REQUIRED	316	m ³

THE SITE IS LOCATED WITHIN THE BRANXTON SOIL LANDSCAPE AND PRIMARILY CONSISTS OF SANDY AND SILTY CLAYS (AS PER THE SITE SPECIFIC GEOTECHNICAL INVESTIGATION).

SEDIMENT BASIN SIZING		
CONSTRAINT	VALUE	UNITS
CV = VOLUMETRIC RUNOFF COEFFICIENT	0.64	
R = 5 DAY, 85 TH PERCENTILE RAINFALL	31.0	mm
A = CATCHMENT AREA	2.04	ha
SETTLING ZONE VOLUME (10xCVxRxA)	405	m ³
A2 = DISTURBED CATCHMENT AREA	2.04	ha
SETTLED STORAGE VOLUME (0.17xSOIL LOSSxA2)	18	m ³
TOTAL BASIN VOLUME REQUIRED	423	m ³

THE SITE IS LOCATED WITHIN THE BRANXTON SOIL LANDSCAPE AND PRIMARILY CONSISTS OF SANDY AND SILTY CLAYS (AS PER THE SITE SPECIFIC GEOTECHNICAL INVESTIGATION).

SEDIMENT BASIN SIZING		
CONSTRAINT	VALUE	UNITS
CV = VOLUMETRIC RUNOFF COEFFICIENT	0.64	
R = 5 DAY, 85 TH PERCENTILE RAINFALL	31.0	mm
A = CATCHMENT AREA	1.68	ha
SETTLING ZONE VOLUME (10xCVxRxA)	333	m ³
A2 = DISTURBED CATCHMENT AREA	1.68	ha
SEDIMENT STORAGE VOLUME (0.17xSOIL LOSSxA2)	28	m ³
TOTAL BASIN VOLUME REQUIRED	361	m ³

THE SITE IS LOCATED WITHIN THE BRANXTON SOIL LANDSCAPE AND PRIMARILY CONSISTS OF SANDY AND SILTY CLAYS (AS PER THE SITE SPECIFIC GEOTECHNICAL INVESTIGATION).

SEDIMENT BASIN SIZING		
CONSTRAINT	VALUE	UNITS
CV = VOLUMETRIC RUNOFF COEFFICIENT	0.64	
R = 5 DAY, 85 TH PERCENTILE RAINFALL	31.0	mm
A = CATCHMENT AREA	1.05	ha
SETTLING ZONE VOLUME (10xCVxRxA)	208	m ³
A2 = DISTURBED CATCHMENT AREA	1.05	ha
SEDIMENT STORAGE VOLUME (0.17xSOIL LOSSxA2)	14	m ³
TOTAL BASIN VOLUME REQUIRED	222	m ³

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.	PROJECT	DRAWING TITLE	JOB NUMBER
1	ISSUED FOR DISCUSSION	GW		RD	26.11.21	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION		 Newcastle Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325	CIVIL ENGINEERING PACKAGE	NL167397
2	ISSUED FOR APPROVAL	JR	CP	GW	14.12.21						
3	ISSUED FOR APPROVAL	JR	CP	GW	14.01.22						
4	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22						
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD			DRAWING NUMBER DA-C03.06	REVISION 4
											DRAWING SHEET SIZE = A1



- NOTES**
- EARTHWORKS VOLUMES ARE INDICATIVE ONLY BASED ON PRELIMINARY SITE GRADING
 - EARTHWORKS DEPTHS AND QUANTITIES SHOWN ARE BETWEEN THE EXISTING NATURAL SURFACE AND THE INDICATIVE BULK/SUBGRADE SURFACE LEVELS. STRIPPING OF ANY TOPSOIL HAS NOT BEEN ACCOUNTED FOR. INDICATIVE SURFACE DEPTHS:
2.1. ROAD PAVEMENT DEPTH = 450mm
2.2. BUILDING PAD DEPTH = 150mm
 - BULKING FACTORS NOT CONSIDERED IN REPORTED VOLUMES.
 - CUT/FILL QUANTITIES DO NOT ACCOUNT FOR STORMWATER OR UTILITY SERVICE TRENCHING (SUBSOIL, ELECTRICAL, IRRIGATION, HYDRAULIC, SEWER ETC), FOOTINGS OR OTHER DETAILED EXCAVATION, SUCH AS RETAINING WALL/ON SITE DETENTION TANK BACKFILL WALL AREAS.
 - CUT/FILL QUANTITIES DO NOT ACCOUNT FOR STORMWATER BASIN/CHANNEL EXCAVATION.
 - BULK EARTHWORKS LEVELS AND CUT/FILL QUANTITIES DO NOT ACCOUNT FOR SUB-GRADE REPLACEMENT OR REMOVAL OF UNSUITABLE MATERIAL.
 - ANY WORKS TO OCCUR IN ANY ABORIGINAL HERITAGE PAD ARE TO BE CONDUCTED IN ACCORDANCE WITH THE ABORIGINAL CULTURAL HERITAGE CONSTRUCTION MANAGEMENT PLAN (MCCARDLE, 2024)
 - 1% AEP DEVELOPED CASE FLOOD EXTENT PROVIDED BY BMT 10th DECEMBER 2021

LEGEND

- SITE BOUNDARY LINE
- ADJACENT BOUNDARY LINE
- EASEMENT LINE
- 1% AEP DEVELOPED CASE FLOOD EXTENTS
- RW 1 PROPOSED RETAINING WALL (WITH ASSOCIATED HANDRAIL AS PER LANDSCAPE ARCHITECT DESIGN)
- RW 2 PROPOSED RETAINING WALL (16m HIGH) WITH ASSOCIATED GUARD RAIL. DETAILS TO BE PROVIDED AT CC STAGE
- A1 FFL59.5 PROPOSED/EXISTING BUILDING NAME AND FINISHED FLOOR LEVEL, m AHD
- A1 FFL59.5
- ABORIGINAL (AHIMS) SITES
- DENOTES PROPOSED BULK EARTHWORKS LEVELS (BE) AND NATURAL/EXISTING SURFACE LEVEL (NS), m AHD.

DEPTH OF CUT

DEPTH OF FILL

SITE CUT & FILL QUANTITIES	
TOTAL CUT	8,140 m ³
TOTAL FILL	26,510 m ³
BALANCE	18,370 m ³ (REQUIRED IMPORT)

VERIFIER: C PIPER
JOB MANAGER: C PIPER
DESIGNED: R DIERCKE/G WOOD
DRAWN: R DIERCKE

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
6	ISSUED FOR APPROVAL	RK	CP	GW	06.10.22
7	ISSUED FOR APPROVAL	CA	CP	GW	06.06.24
8	ISSUED FOR APPROVAL	DM	CP	GW	27.09.24
9	ISSUED FOR APPROVAL	DM	CP	GW	29.01.25
10	ISSUED FOR APPROVAL	JR	CP	LJ	11.02.25
11	ISSUED FOR APPROVAL	EW	CP	CP	20.03.25

**ST PHILIP'S CHRISTIAN
EDUCATION FOUNDATION**

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SHAC

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SCALE 1:1000 @ A1

NORTHROP
Newcastle

Level 1, 215 Pacific Hwy, Charlestown NSW 2290
Ph (02) 4943 1777 Email newcastle@northrop.com.au
ABN 81 094 433 100

PROJECT
ST PHILIP'S CHRISTIAN COLLEGE
10 LOMAS LANE, NULKABA
NSW 2325

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
**CONCEPT EARTHWORKS PLAN -
SHEET 1**

JOB NUMBER
NL167397

DRAWING NUMBER DA-C04.01	REVISION 11
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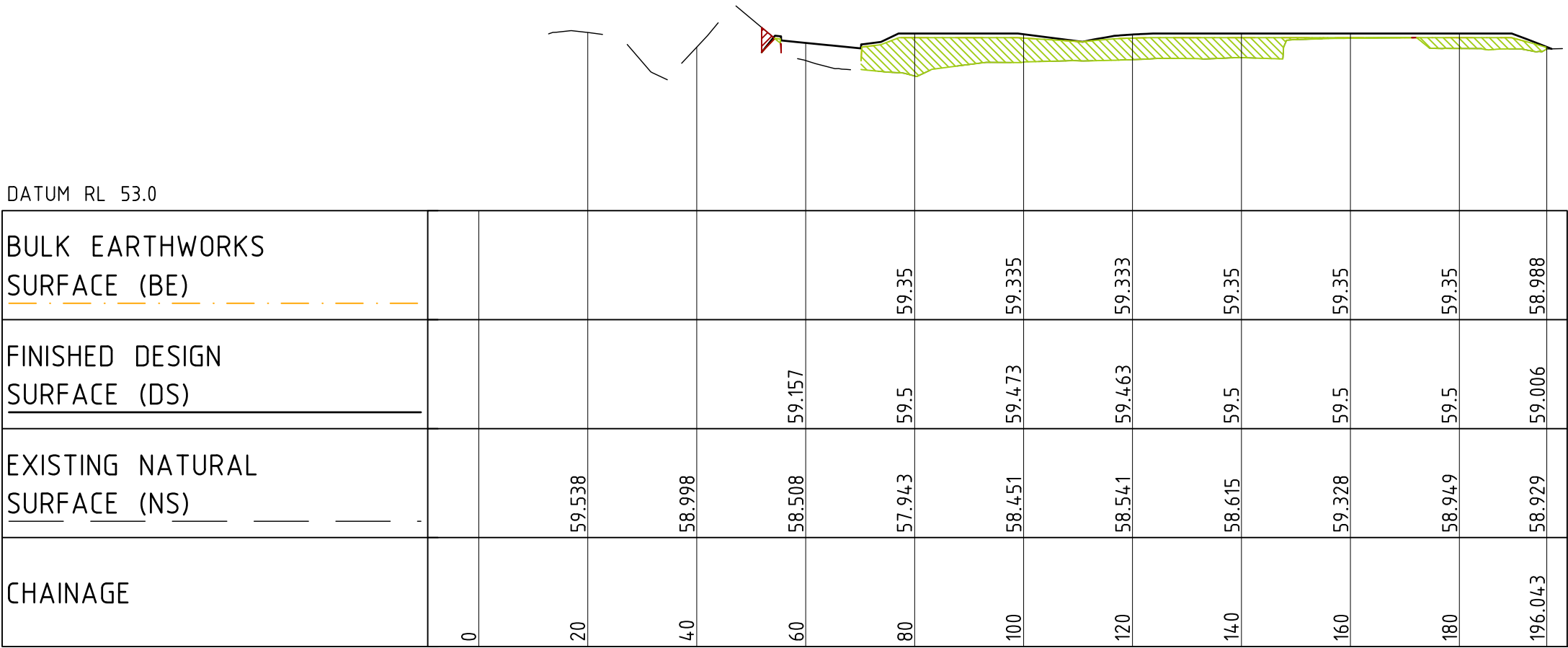
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VERIFIER: C PIPER

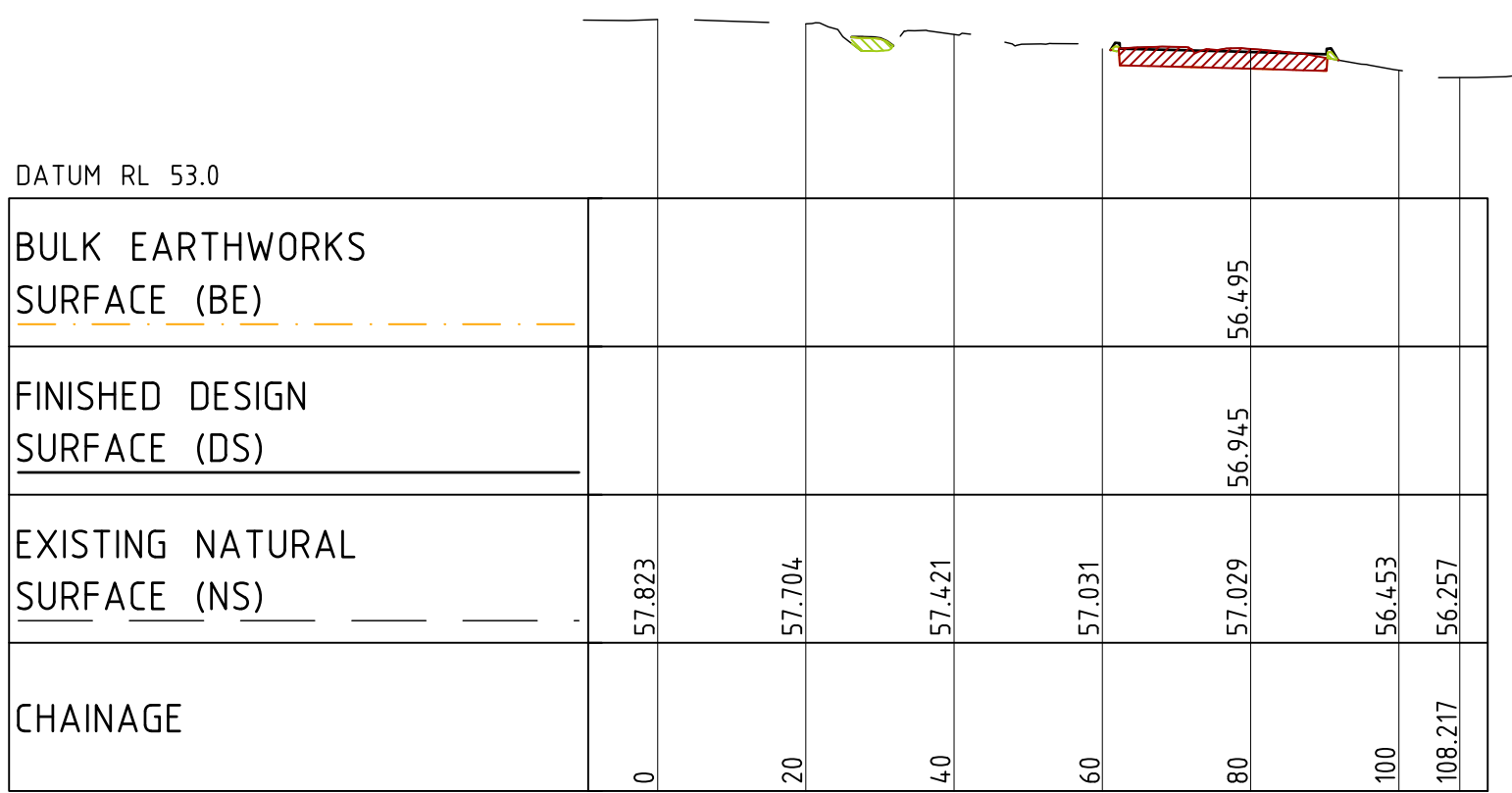
JOB MANAGER: C PIPER

DESIGNED: R DIERCKE / G WOOD

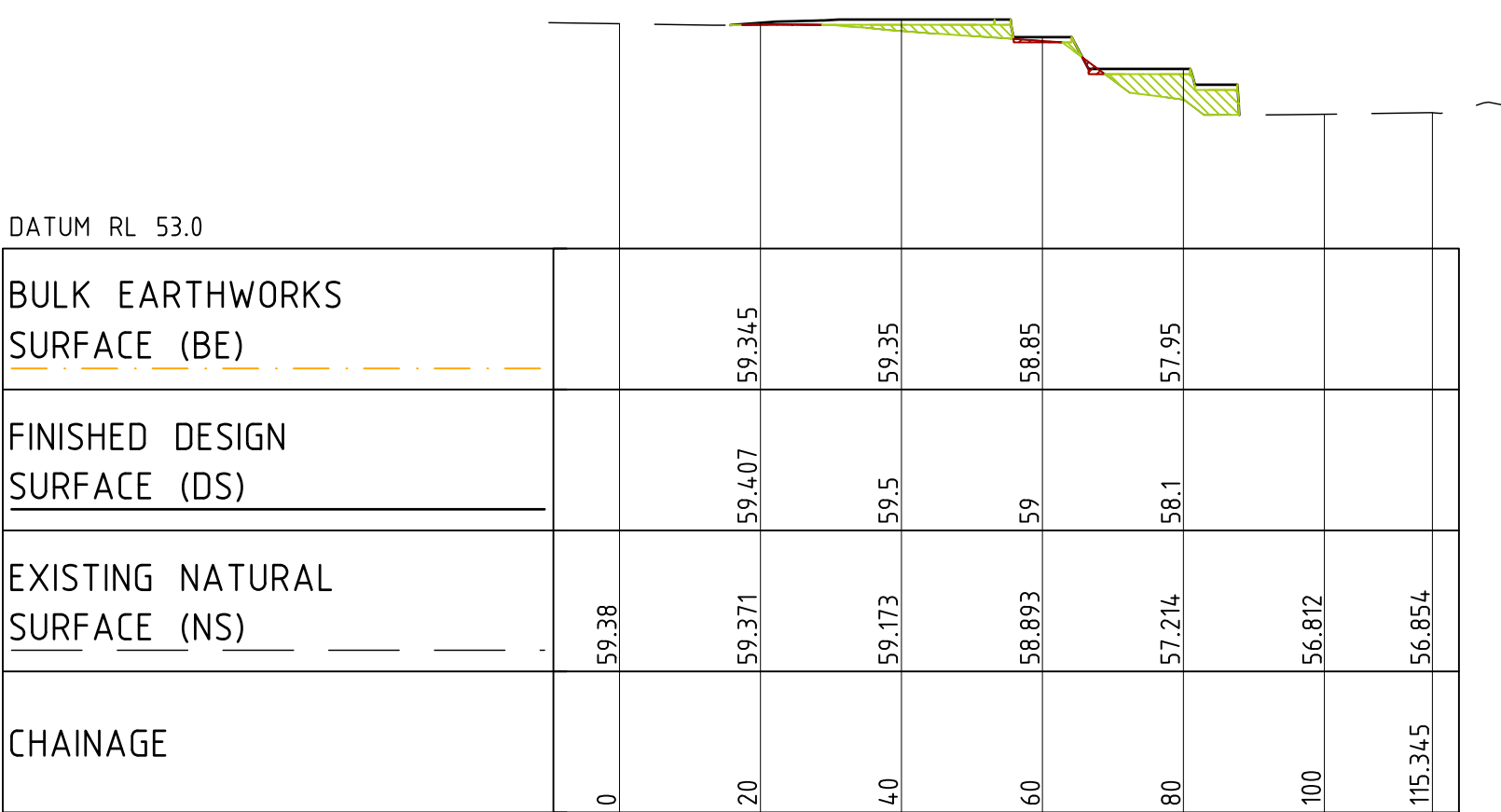
DRAWN: R DIERCKE



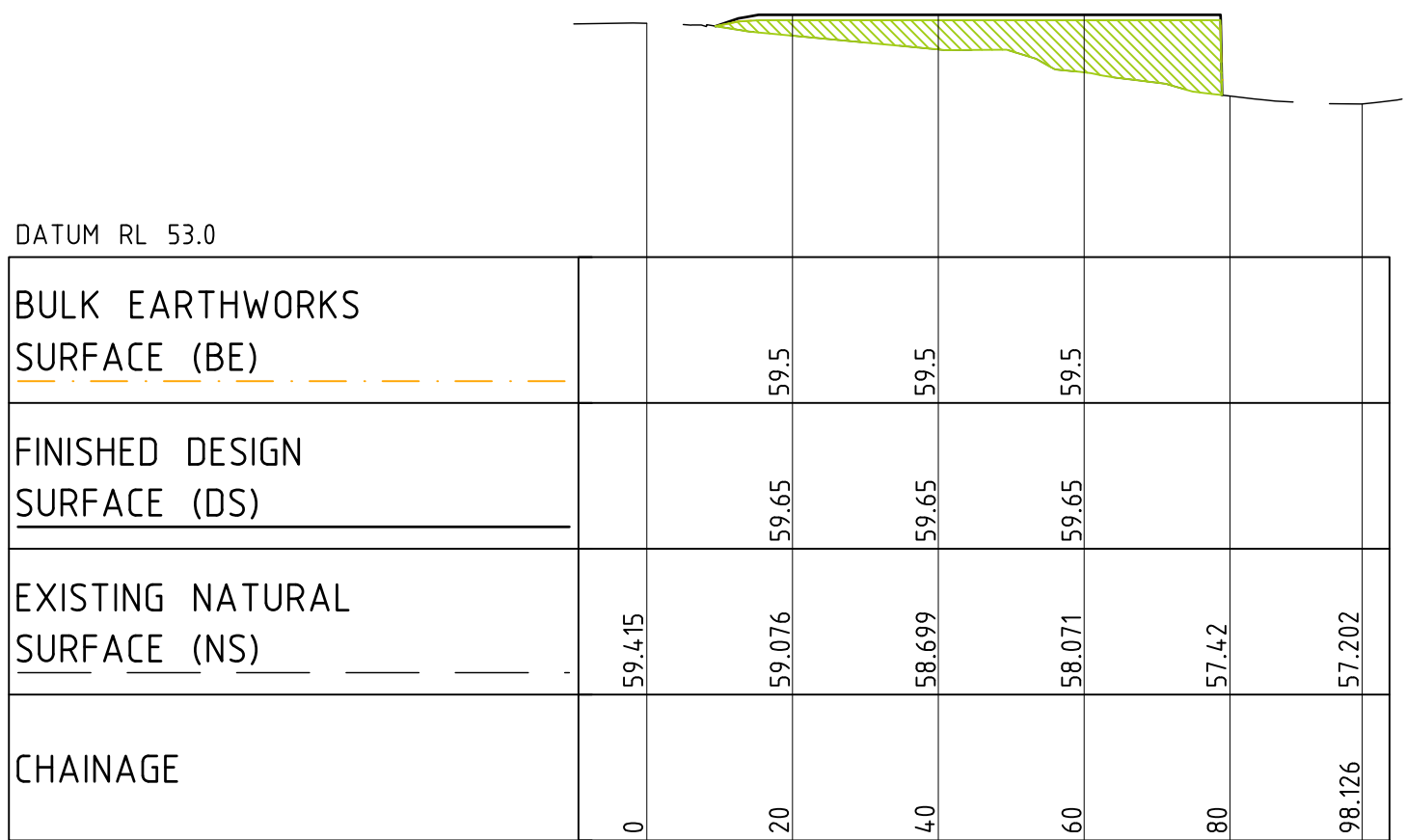
LONGITUDINAL SECTION ALONG 01
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1



LONGITUDINAL SECTION ALONG 02
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1



LONGITUDINAL SECTION ALONG 03
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1



LONGITUDINAL SECTION ALONG 04
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1

NOT FOR CONSTRUCTION

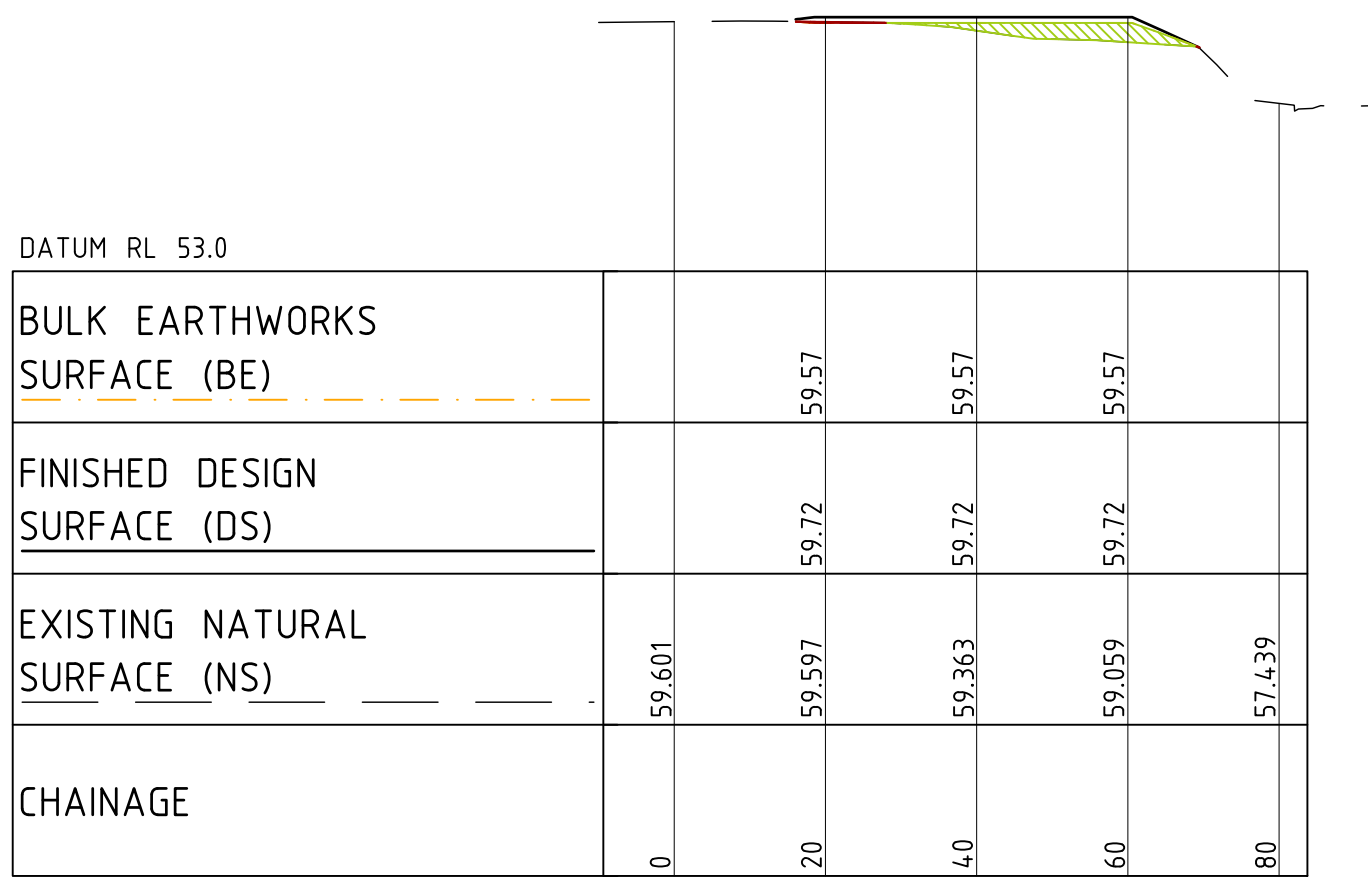
REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.		PROJECT	DRAWING TITLE	JOB NUMBER
1	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION	SHAC		SCALE 1:500@A10 5 10 15 20 25m SCALE 1:100 @A10 1 2 3 4 5m	ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325	CIVIL ENGINEERING PACKAGE	NL167397
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD		Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	EARTHWORKS SITE SECTIONS - SHEET 1		
											DRAWING NUMBER	REVISION
											DA-C04.11	1
DRAWING SHEET SIZE = A1												

VERIFIER: C PIPER

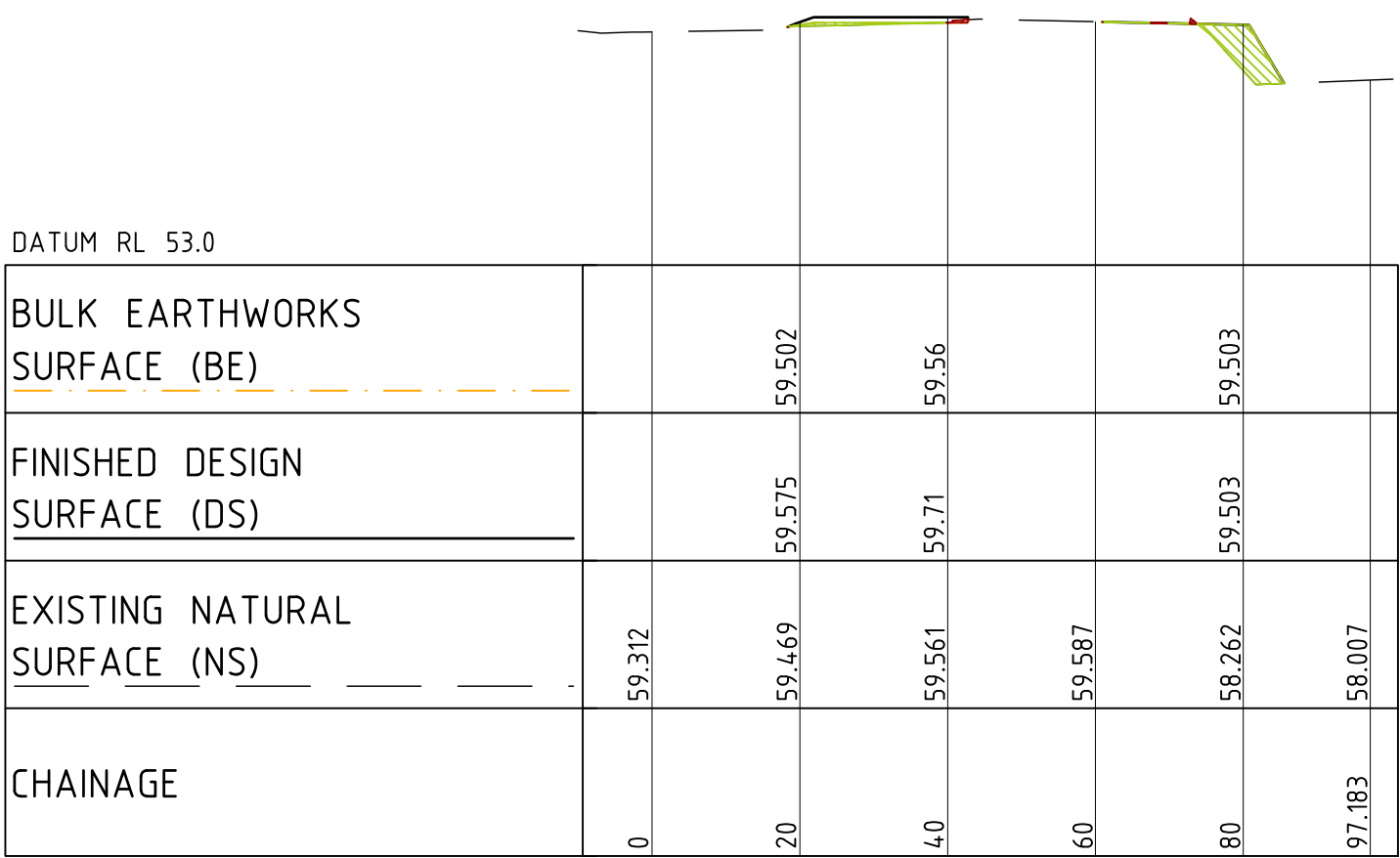
JOB MANAGER: C PIPER

DESIGNED: R DIERCKE/G WOOD

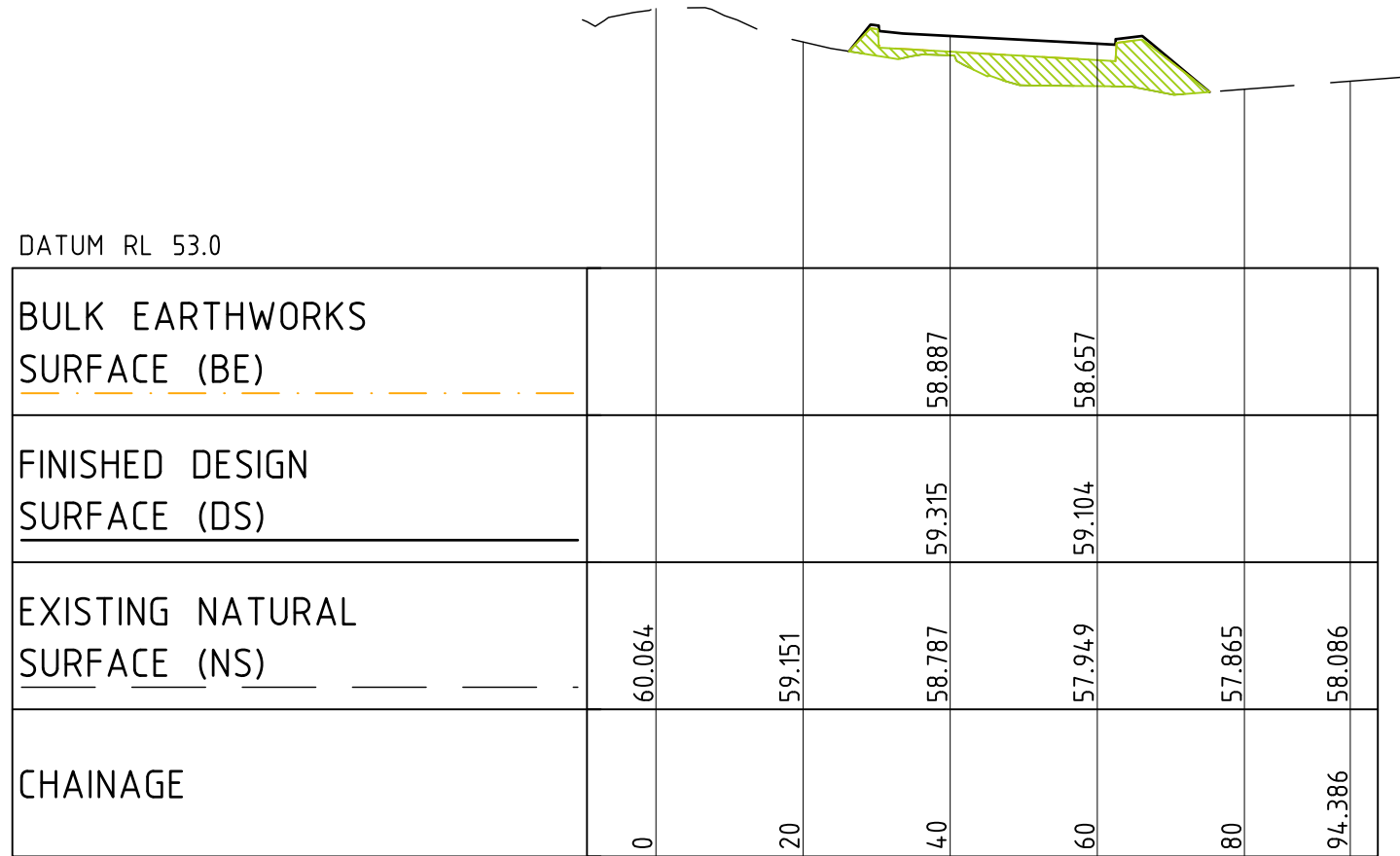
DRAWN: R DIERCKE



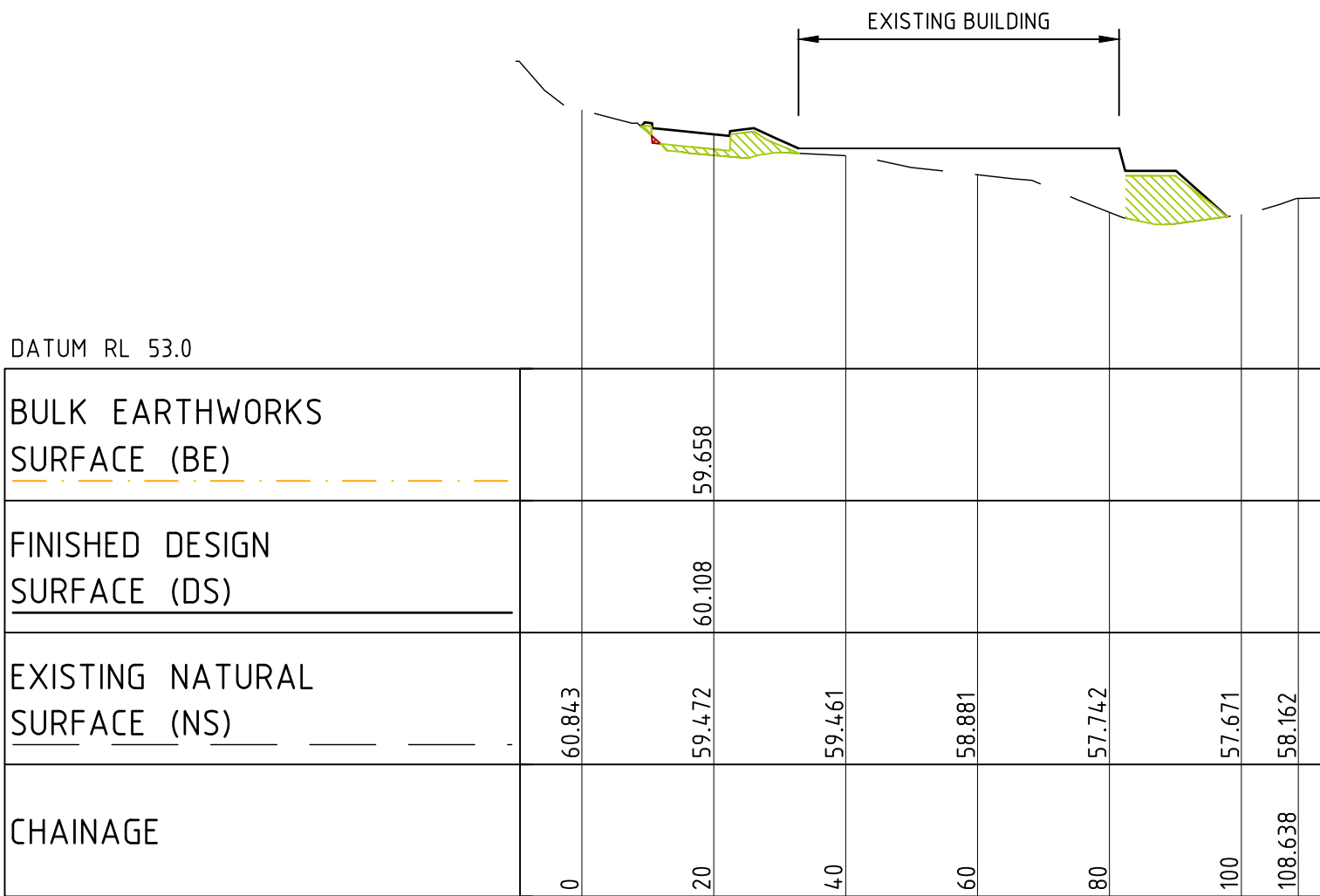
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VERTICAL SCALE 1:200@A1



LONGITUDINAL SECTION ALONG 06
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1



LONGITUDINAL SECTION ALONG 07
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1



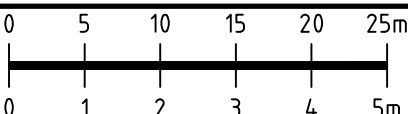
LONGITUDINAL SECTION ALONG 08
HORIZONTAL SCALE 1:1000@A1
VERTICAL SCALE 1:200@A1

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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	PROJECT	DRAWING TITLE	JOB NUMBER
1	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION	SHAC	ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325	CIVIL ENGINEERING PACKAGE	NL167397
									EARTHWORKS SITE SECTIONS - SHEET 2	DRAWING NUMBER DA-C04.12
										REVISION 1
										DRAWING SHEET SIZE ± A1

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SCALE 1:500@A1
SCALE 1:100 @A1



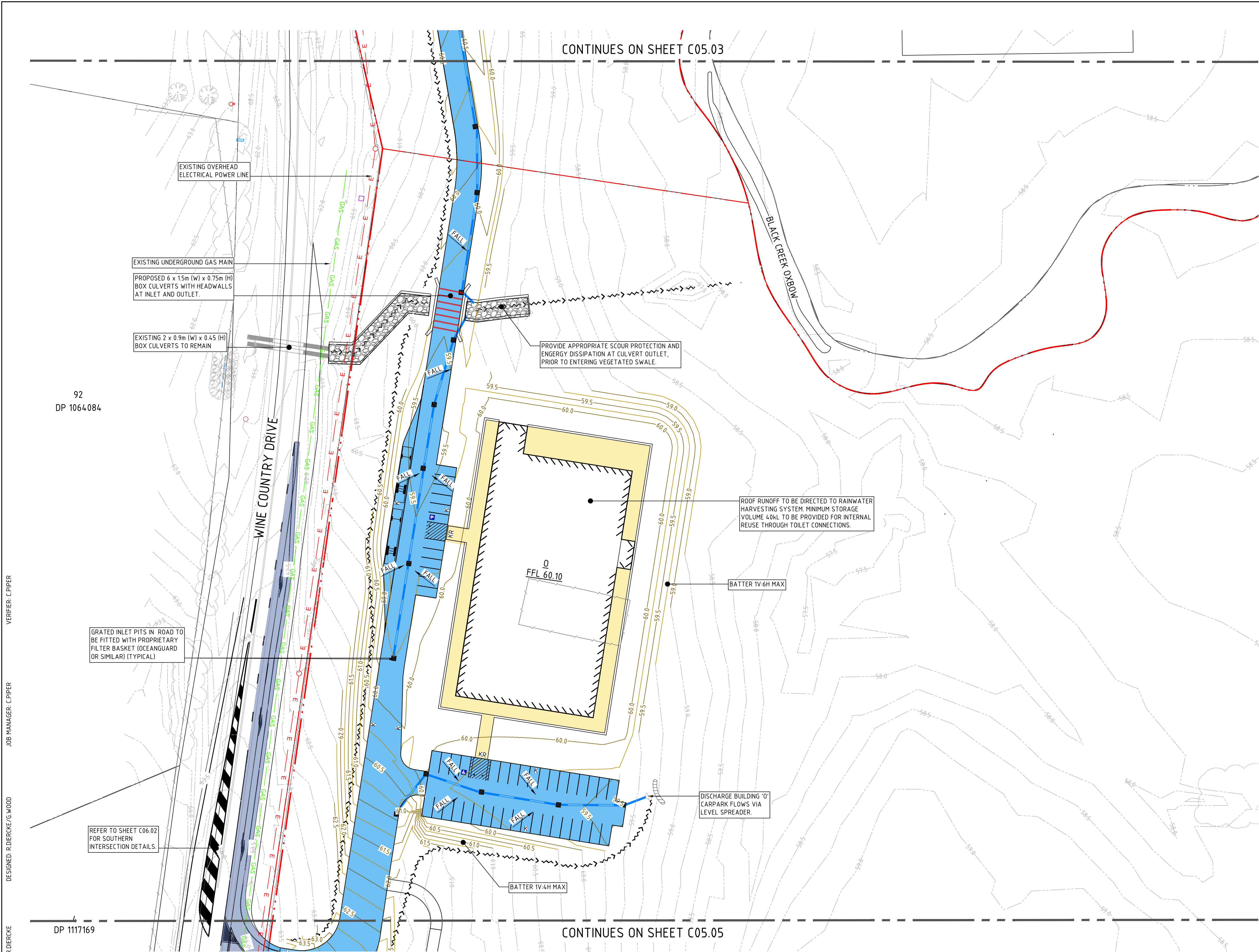
NORTHROP
Newcastle
Level 1, 215 Pacific Hwy, Charlestown NSW 2290
Ph (02) 4943 1777 Email newcastle@northrop.com.au
ABN 81 094 433 100



DRAWN: R.DIERCKE

NOT FOR CONSTRUCTION

[illegible]



LEGEND

--- SITE BOUNDARY LINE
--- ADJACENT BOUNDARY LINE
--- EASEMENT LINE

XX.XX DESIGN CONTOURS @ 0.25m INTERVALS
XX.XX EXISTING CONTOURS @ 0.25m INTERVALS

A1 FFL59.5 A1 FFL59.5 PROPOSED/EXISTING BUILDING NAME AND FINISHED FLOOR LEVEL, m AHD

PROPOSED AC ROAD PAVEMENT
PROPOSED GRAVEL ROAD/CARPARK PAVEMENT
PROPOSED PERMEABLE PAVEMENT
PROPOSED CONCRETE FOOTPATH
PROPOSED CONCRETE MEDIAN
PROPOSED EXTERNAL ROAD PAVEMENT WIDENING
PROPOSED LANDSCAPE AREAS. REFER TO LANDSCAPE ARCHITECTURAL PLANS
PROPOSED ELEVATED BOARDWALK
ROCK LINED CHANNEL
PROPOSED BASIN
EXISTING HARDSTAND/ROAD PAVEMENT TO REMAIN
EXISTING GRAVEL PAVEMENT TO REMAIN

K PROPOSED KERB
eK EXISTING KERB
MK PROPOSED MEDIAN
KR PROPOSED KERB RAMP
RW 1 PROPOSED RETAINING WALL (WITH ASSOCIATED HANDRAIL AS PER LANDSCAPE ARCHITECT DESIGN)
RW 2 PROPOSED RETAINING WALL (1.6m HIGH) WITH ASSOCIATED GUARD RAIL. DETAILS TO BE PROVIDED AT CC STAGE
PROPOSED STORMWATER PIPE
EXISTING STORMWATER PIPE
EXISTING STORMWATER PIPE TO BE DEMOLISHED
STORMWATER PIT. NOTE PROPOSED PITS WITHIN ROAD TO BE FITTED WITH FILTER BASKETS.
HEADWALL
PROPOSED VEGETATED SWALE
EXISTING DRAINAGE SWALE
DENOTES PROPOSED GPT
DENOTES PROPOSED BOX CULVERT
DENOTES PROPOSED OVERLAND FLOW PATH
DENOTES PROPOSED LEVEL SPREADER

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REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR DISCUSSION	GW		RD	26.11.21
2	ISSUED FOR APPROVAL	JR	CP	GW	16.12.21
3	ISSUED FOR APPROVAL	JR	CP	GW	16.01.22
4	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22
5	ISSUED FOR APPROVAL	DM	CP	GW	27.09.24
6	ISSUED FOR APPROVAL	JR	CP	LJ	11.02.25

CLIENT	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	

ARCHITECT	SHAC
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SCALE 1:500@A1

0 5 10 15 20 25m

NORTHROP
Newcastle
Level 1, 215 Pacific Hwy, Charlestown NSW 2290
Ph (02) 4943 1777 Email newcastle@northrop.com.au
ABN 81 094 433 100

PROJECT	ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325
---------	---

DRAWING TITLE	CIVIL ENGINEERING PACKAGE
CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN - SHEET 4	

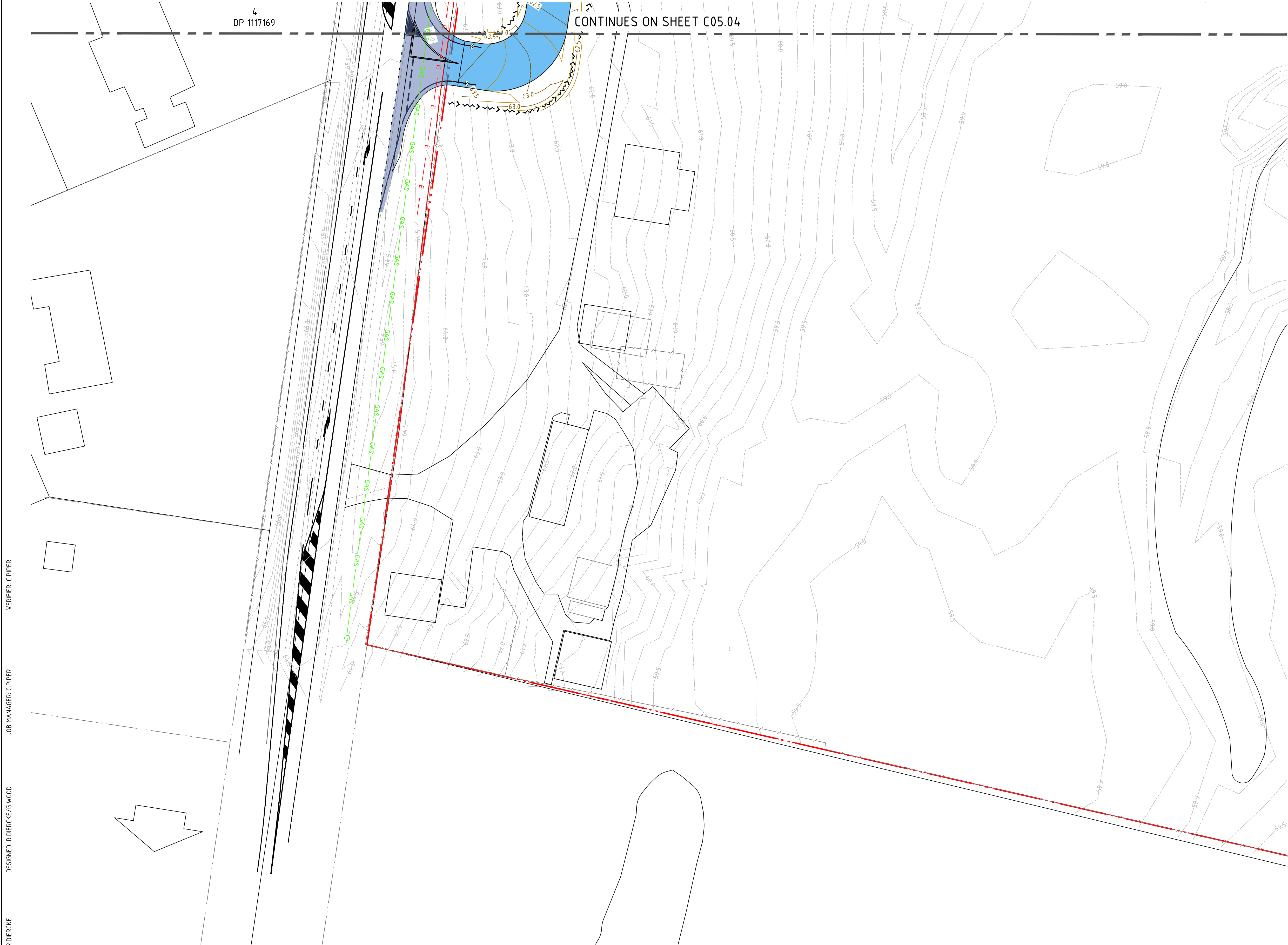
JOB NUMBER	NL167397
DRAWING NUMBER	DA-C05.04
REVISION	6
DRAWING SHEET SIZE ± A1	

VERIFIER: C PIPER

JOB MANAGER: C PIPER

DESIGNED: R DIERCKE / G WOOD

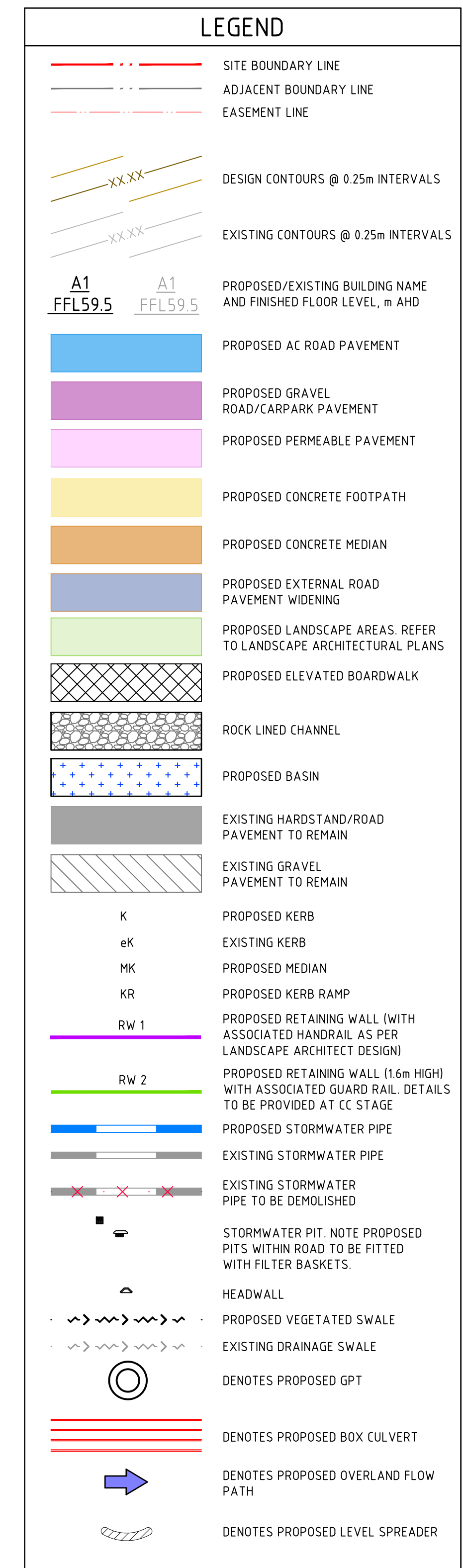
DRAWN: R DIERCKE



LEGEND	
	SITE BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	EASEMENT LINE
	DESIGN CONTOURS @ 0.25m INTERVALS
	EXISTING CONTOURS @ 0.25m INTERVALS
	PROPOSED/EXISTING BUILDING NAME AND FINISHED FLOOR LEVEL, m AHD
	PROPOSED AC ROAD PAVEMENT
	PROPOSED GRAVEL ROAD/CARPARK PAVEMENT
	PROPOSED PERMEABLE PAVEMENT
	PROPOSED CONCRETE FOOTPATH
	PROPOSED CONCRETE MEDIAN
	PROPOSED EXTERNAL ROAD PAVEMENT WIDENING
	PROPOSED LANDSCAPE AREAS. REFER TO LANDSCAPE ARCHITECT PLANS
	PROPOSED ELEVATED BOARDWALK
	ROCK LINED CHANNEL
	PROPOSED BASIN
	EXISTING HARDSTAND/ROAD PAVEMENT TO REMAIN
	EXISTING GRAVEL PAVEMENT TO REMAIN
	PROPOSED KERB
	EXISTING KERB
	PROPOSED MEDIAN
	PROPOSED KERB RAMP
	PROPOSED RETAINING WALL (WITH ASSOCIATED HANDRAIL AS PER LANDSCAPE ARCHITECT DESIGN)
	PROPOSED RETAINING WALL (1.6m HIGH) WITH ASSOCIATED GUARD RAIL. DETAILS TO BE PROVIDED AT CC STAGE
	PROPOSED STORMWATER PIPE
	EXISTING STORMWATER PIPE
	EXISTING STORMWATER PIPE TO BE DEMOLISHED
	STORMWATER PIT. NOTE PROPOSED PITS WITHIN ROAD TO BE FITTED WITH FILTER BASKETS.
	HEADWALL
	PROPOSED VEGETATED SWALE
	EXISTING DRAINAGE SWALE
	DENOTES PROPOSED GPT
	DENOTES PROPOSED BOX CULVERT
	DENOTES PROPOSED OVERLAND FLOW PATH
	DENOTES PROPOSED LEVEL SPREADER

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	SCALE	PROJECT	DRAWING TITLE	JOB NUMBER
1	ISSUED FOR DISCUSSION	GW		RD	26.11.21	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION		 ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.	 ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325	CIVIL ENGINEERING PACKAGE	NL167397
2	ISSUED FOR APPROVAL	JR	CP	GW	14.12.21						
3	ISSUED FOR APPROVAL	JR	CP	GW	14.01.22						
4	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22						
5	ISSUED FOR APPROVAL	DM	CP	GW	27.09.24						
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD	 SCALE 1:500@A1	Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	CONCEPT STORMWATER MANAGEMENT AND LEVELS PLAN - SHEET 5	DRAWING NUMBER DA-C05.05 REVISION 5 DRAWING SHEET SIZE = A1



REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	PROJECT	DRAWING TITLE	JOB NUMBER	
3	ISSUED FOR APPROVAL	JR	CP	GW	14.01.22	ST PHILIP'S CHRISTIAN FOUNDATION			ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325	CIVIL ENGINEERING PACKAGE	NL167397
4	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22						
5	ISSUED FOR APPROVAL	JS	CP	GW	30.09.22						
6	ISSUED FOR APPROVAL	DM	CP	GW	27.09.24						
7	ISSUED FOR APPROVAL	DM	CP	GW	28.01.25						
8	ISSUED FOR APPROVAL	JR	CP	LJ	11.02.25	DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD	Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	DRAWING NUMBER DA-C05.06	REVISION 8	
ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.								DRAWING SHEET SIZE = A1			

VERIFIER: C PIPER
JOB MANAGER: C PIPER
DESIGNED: R DIERCKE / G WOOD
DRAWN: R DIERCKE



LEGEND	
	SITE BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	CADASTRE BOUNDARY LINE
	EASEMENT LINE
	PROPOSED CONCRETE MEDIAN
	PROPOSED EDGE OF BITUMEN
	EXISTING EDGE OF BITUMEN
	PROPOSED LINEMARKING
	DENOTES EXISTING LINEMARKING
	W DENOTES EXISTING WATER
	S DENOTES EXISTING SEWER
	G DENOTES EXISTING GAS
	E DENOTES EXISTING ELECTRICAL
	PROPOSED GUARD RAIL EXTENSION

ASSUMPTIONS	
1.	INTERSECTION DESIGN BASED ON SIDRA MODEL PREPARED BY STANTEC (REC'D 07.04.22)
2.	INTERSECTION GEOMETRY BASED ON A 80km/hr DESIGN SPEED.
3.	INTERSECTION GEOMETRY HAS GENERALLY BEEN PROVIDED TO COMPLY WITH AUSTRROAD AGRD PART 3, 4 & 4A.
4.	FULL DECELERATION LENGTHS PROVIDED TO AUXILIARY LANES TO PREVENT REDUCTION OF SPEED ALONG WINE COUNTRY DRIVE THROUGH LANES. DECELERATION LENGTHS NOT ALLOWED FOR WITHIN LOMAS LANE DUE TO NATURE OF THE 'T' INTERSECTION ARRANGEMENT.
5.	BOUNDARY INFORMATION (SHOWN ORANGE) HAS BEEN OBTAINED FROM SIX MAPS CADASTRE.

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	SCALE	ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.	PROJECT	DRAWING TITLE	DRAWING NUMBER	REVISION
6	ISSUED FOR APPROVAL	RK	CP	GW	06.10.22	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION	SHAC	SCALE 1:500@A1		ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325	CIVIL ENGINEERING PACKAGE CONCEPT INTERSECTION DESIGN - NORTH ENTRANCE	NL167397	11
7	ISSUED FOR APPROVAL	CA	CP	GW	06.06.24								
8	ISSUED FOR APPROVAL	JK	CP	GW	19.06.24								
9	ISSUED FOR APPROVAL	DM	CP	GW	29.01.25								
10	ISSUED FOR APPROVAL	JR	CP	LJ	11.02.25								
11	ISSUED FOR APPROVAL	EW	CP	CP	20.03.25	DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD					DA-C06.01	

VERIFIER: C PIPER

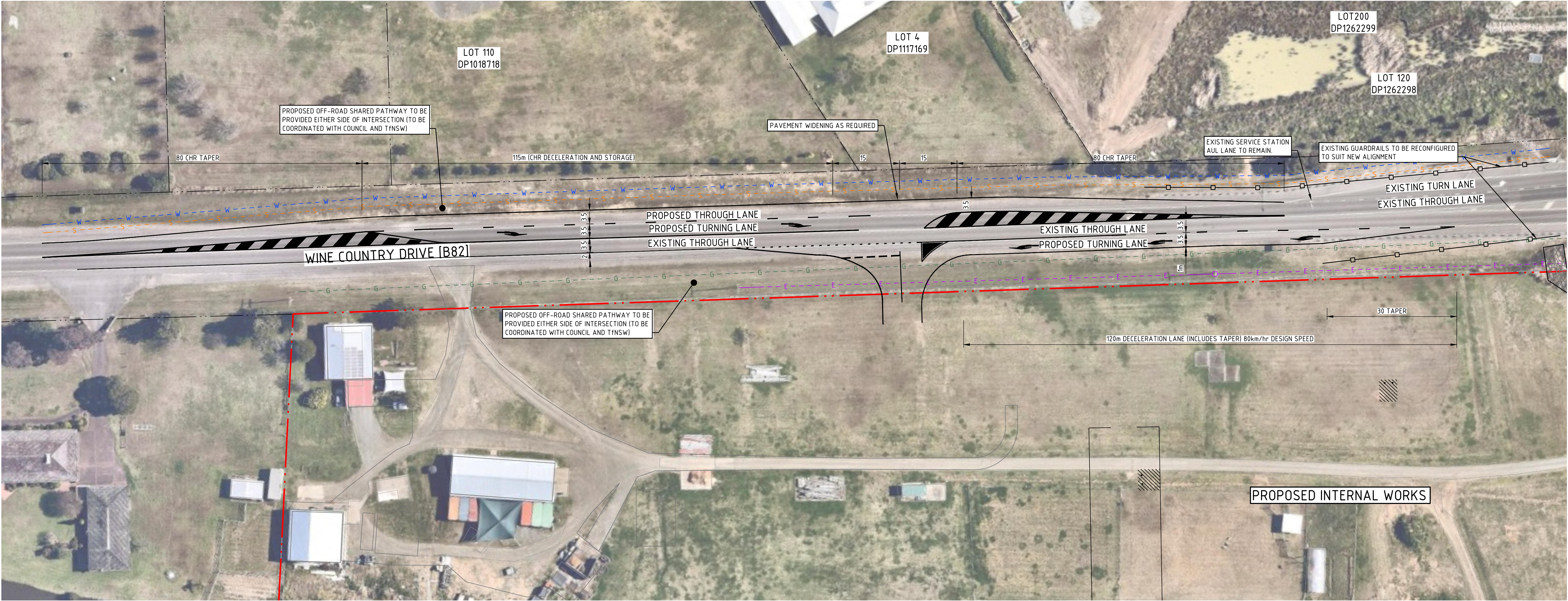
JOB MANAGER: C PIPER

DESIGNED: R DIERCKE / G WOOD

DRAWN: R DIERCKE

NOTES	
1.	INTERSECTION GEOMETRY BASED ON A 80 km/hr DESIGN SPEED (70 km/hr SIGN POSTED PLUS 10km/hr).
2.	CHR LEFT/RIGHT IN AND OUT HAS BEEN SIZED FOR A HRV (12.5m LONG) DESIGN VEHICLE
3.	INTERSECTION GEOMETRY HAS BEN SIZED IN ACCORDANCE WITH AUSROADS GUIDE TO ROAD DESIGN - PART 4 AND 4A

LEGEND	
	SITE BOUNDARY LINE
	ADJACENT BOUNDARY LINE
	CADASTRE BOUNDARY LINE
	EASEMENT LINE
	PROPOSED CONCRETE MEDIAN
	PROPOSED EDGE OF BITUMEN
	EXISTING EDGE OF BITUMEN
	PROPOSED LINEMARKING
	DENOTES EXISTING LINEMARKING
	DENOTES EXISTING WATER
	DENOTES EXISTING SEWER
	DENOTES EXISTING GAS
	DENOTES EXISTING ELECTRICAL
	PROPOSED GUARD RAIL EXTENSION



NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT			PROJECT	DRAWING TITLE	JOB NUMBER					
1	ISSUED FOR DISCUSSION	GW		RD	26.11.21	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION	SHAC		ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.		ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325	CIVIL ENGINEERING PACKAGE	NL167397				
2	ISSUED FOR APPROVAL	JR	CP	GW	14.12.21												
3	ISSUED FOR APPROVAL	JR	CP	GW	14.01.22												
4	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22												
5	ISSUED FOR APPROVAL	RK	CP	GW	06.10.22												
6	ISSUED FOR APPROVAL	DM	CP	GW	29.01.25												
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED							THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD				Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100		CONCEPT INTERSECTION DESIGN - SOUTH ENTRANCE		DRAWING NUMBER DA-C06.02	REVISION 6	DRAWING SHEET SIZE = A1

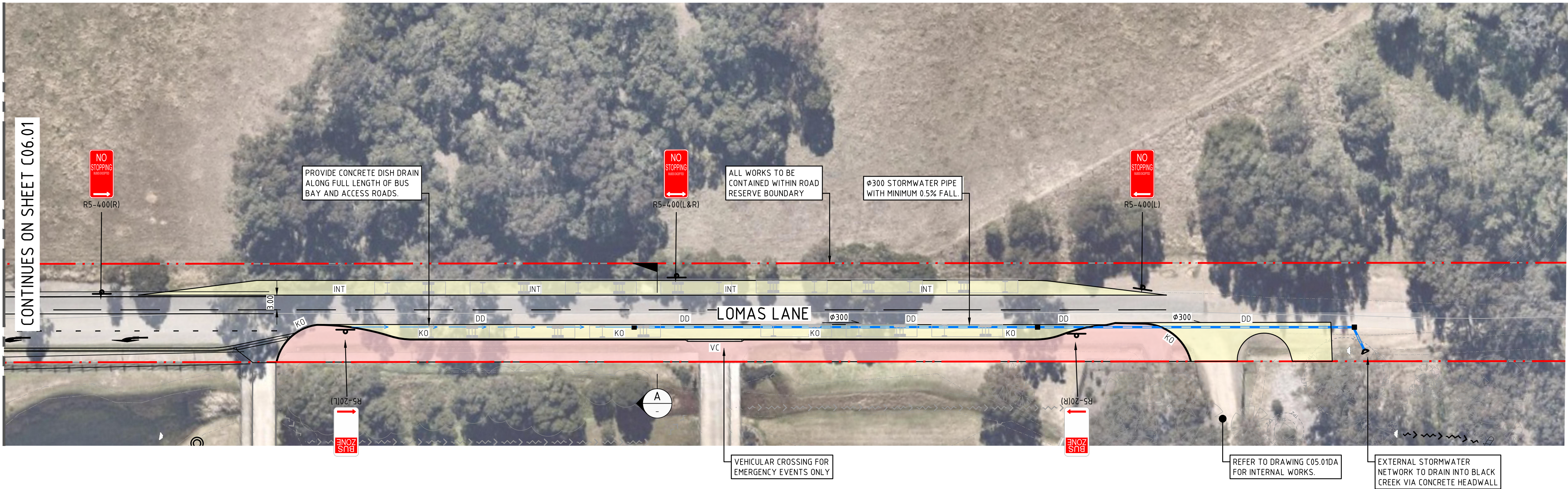
VERIFIER: C.PIPER

JOB MANAGER: C.PIPER

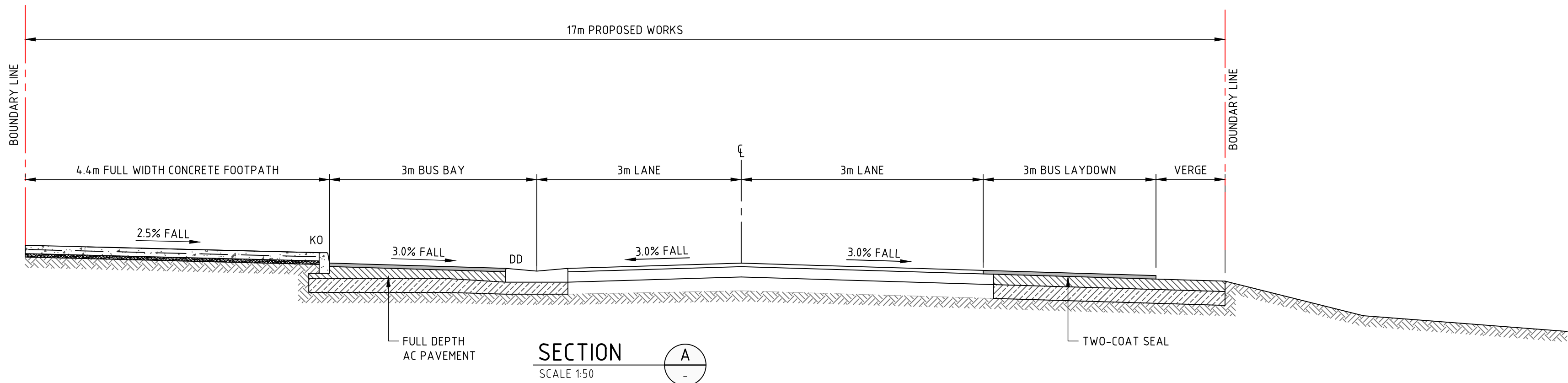
DESIGNED: R.DIERCKE/G.WOOD

DRAWN: R.DIERCKE

CONTINUES ON SHEET C06.01



LEGEND	
	PROPOSED LINEMARKING
	PROPOSED VEHICULAR PAVEMENT
	PROPOSED PEDESTRIAN PAVEMENT
	PROPOSED LINEMARKING
	EXISTING SITE OUTLINE



NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	SCALE	PROJECT	DRAWING TITLE	JOB NUMBER	DRAWING NUMBER	REVISION
2	ISSUED FOR APPROVAL	JR	CP	GW	14.01.22	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION	SHAC	SCALE 1:500@A1	ST PHILIP'S CHRISTIAN COLLEGE	CIVIL ENGINEERING PACKAGE	NL167397	DA-C06.03	7
3	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22				10 LOMAS LANE, NULKABA	PROPOSED LOMAS LANE UPGRADE			
4	ISSUED FOR APPROVAL	JS	CP	GW	30.09.22				NSW 2325				
5	ISSUED FOR APPROVAL	JS	CP	GW	12.10.22								
6	ISSUED FOR APPROVAL	DM	CP	GW	29.01.25								
7	ISSUED FOR APPROVAL	JR	CP	LJ	11.02.25								

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SCALE 1:500@A1

NORTHROP
Newcastle
Level 1, 215 Pacific Hwy, Charlestown NSW 2290
Ph (02) 4943 1777 Email newcastle@northrop.com.au
ABN 81 094 433 100

PROJECT
ST PHILIP'S CHRISTIAN COLLEGE
10 LOMAS LANE, NULKABA
NSW 2325

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
PROPOSED LOMAS LANE UPGRADE

JOB NUMBER
NL167397

DRAWING NUMBER
DA-C06.03

REVISION
7

DRAWING SHEET SIZE ± A1



1. THE SUBGRADE SHALL BE FREE FROM ROCKS, CLODS, VEGETATION AND IMPRINTS OF ANY SIGNIFICANT SIZE SO THAT THE GEOTEXTILE WILL HAVE DIRECT CONTACT WITH THE SOIL SURFACE
2. ENSURE EACH ROL IS ANCHORED PROPERLY AT ITS UPSLOPE END VIA KEYING UNDER THE CONCRETE KEY.
3. LAY GEOTEXTILE IN SINGLE-FASHION, WITH THE END OF EACH UPSTREAM ROLL OVERLAPPING THOSE DOWNSTREAM. ALL OVERLAPS SHOULD BE A MINIMUM 300mm AVOID STRETCHING OF THE GEOTEXTILE DURING INSTALLATION.
4. PLACE ROCK CAREFULLY ONTO THE GEOTEXTILE TO AVOID POSSIBLE RIPPING OF THE GEOTEXTILE. THE PLACEMENT OF SMALLER ROCKS FIRST CAN PROTECT THE GEOTEXTILE FOR SUBSEQUENT LARGE ROCK PLACEMENT. ROCK SHOULD BE PLACED AT A DEPTH SO THAT THE TOP LAYER OF THE ROCK SITS AT OR SLIGHTLY BELOW THE GROUND SURFACE.
5. THE ROCK PLACED SHOULD NOT BE SINGLE SIZED, BUT SHOULD BE A WELL GRADED MIXTURE DESIGNED TO ENSURE THAT ALL GAPS BETWEEN LARGE ROCKS ARE FILLED WITH ROCK OF PROGRESSIVELY SMALLER SIZE SO THAT NO SIGNIFICANT VOIDS OCCUR IN THE RIP-RAP BLANKET.
6. THE ROCK FOR RIP-RAP SHOULD BE HARD, TOUGH AND DURABLE WITH A CRUSHING STRENGTH OF AT LEAST 25MPa.
7. STONE PLACEMENT SHALL BE UNDERTAKEN TO ENSURE ROCKS ARE INTERLOCKED AND NO SIGNIFICANT VOIDS EXIST.



NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT		ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE.	 Northrop Newcastle Level 1, 215 Pacific Hwy, Charlestown NSW 2290 Ph (02) 4943 1777 Email newcastle@northrop.com.au ABN 81 094 433 100	PROJECT	DRAWING TITLE	JOB NUMBER
1	ISSUED FOR DISCUSSION	JW		RD	26.11.21	ST PHILIP'S CHRISTIAN EDUCATION FOUNDATION	SHAC	NOT TO SCALE	ST PHILIP'S CHRISTIAN COLLEGE 10 LOMAS LANE, NULKABA NSW 2325		CIVIL ENGINEERING PACKAGE	NL167397	
2	ISSUED FOR APPROVAL	GR	CP	GW	14.12.21				DRAWING NUMBER		DA-C07.01	REVISION	4
3	ISSUED FOR APPROVAL	JR	CP	GW	14.01.22				CIVIL DETAILS				
4	ISSUED FOR APPROVAL	JS	CP	GW	06.05.22				DRAWING SHEET SIZE = A1				
						DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD						

DRAWN: R.DIERCKE