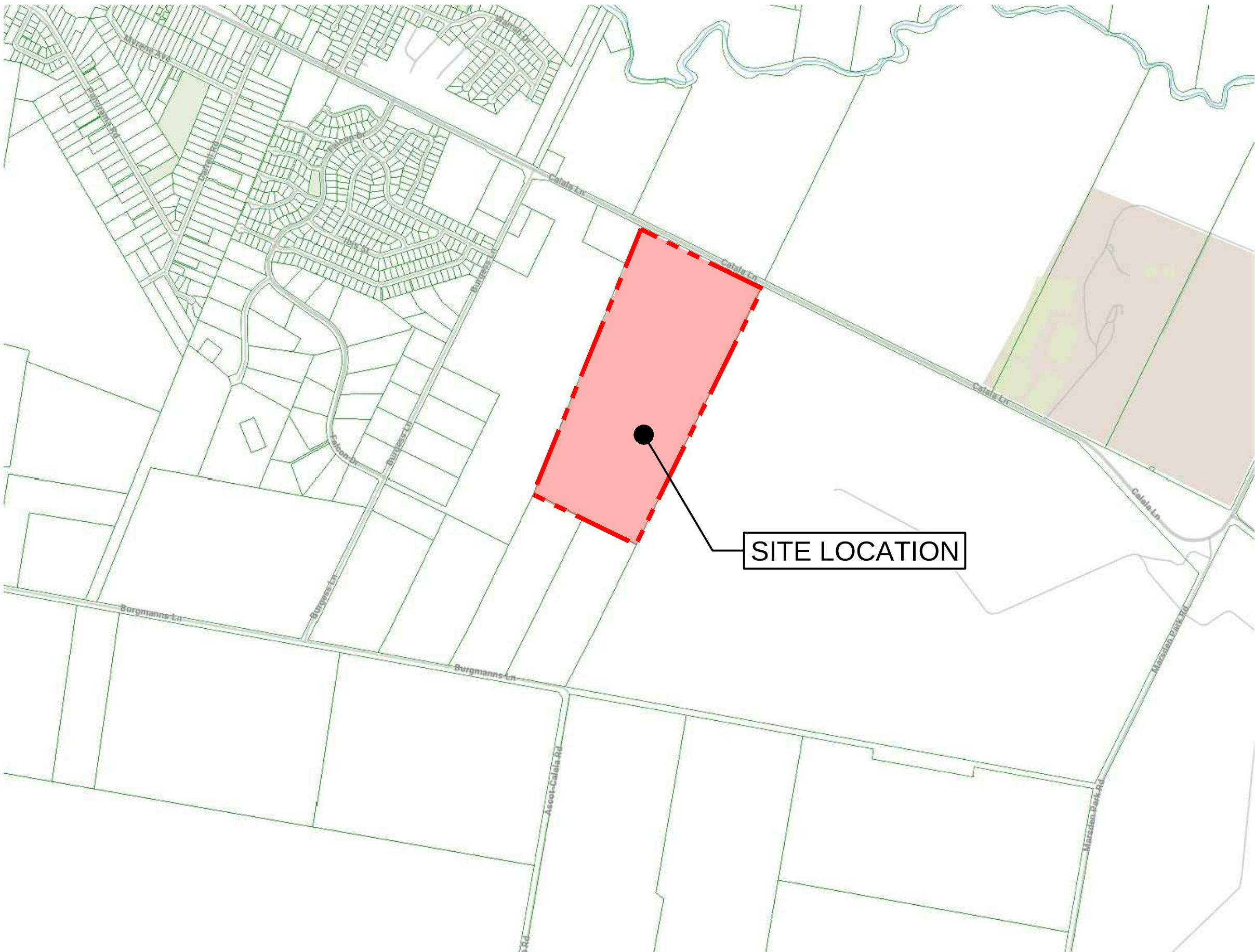
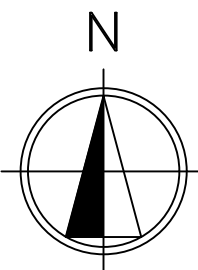


CALALA BESS- 57 BURGESS LANE NSW ALSO KNOWN AS 474 CALALA LANE,
CALALA
FOR
EQUIS ENERGY (AUSTRALIA) PROJECTS (NGUMI 4) PTY LTD AS TRUSTEE FOR
THE EQUIS ENERGY (AUSTRALIA) NGUMI 4 ASSET TRUST
LGA : TAMWORTH REGIONAL COUNCIL
LOT : 17/DP629969



SITE LOCATION PLAN
N.T.S

ENVIRONMENTAL IMPACT STATEMENT
CIVIL SITEWORKS & STORMWATER DRAINAGE PLAN PACKAGE

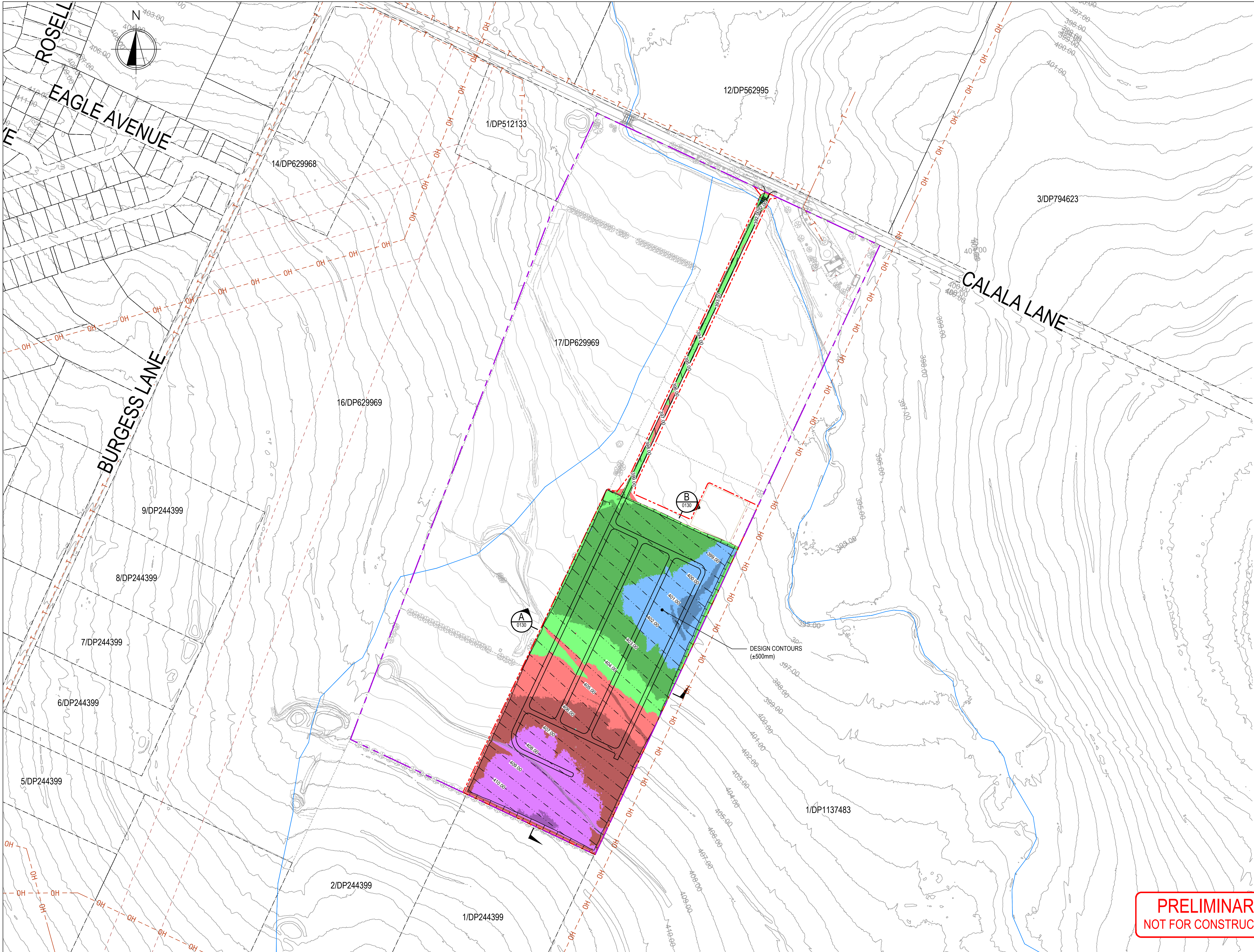
DRAWING LIST

DRAWING NO.	DRAWING TITLE
GENERAL	COVER SHEET LOCALITY PLAN AND DRAWING INDEX
SY22-086-C-0001	GENERAL NOTES
SY22-086-C-0002	GENERAL ARRANGEMENT PLAN
SY22-086-C-0010	EARTHWORKS CUT FILL PLAN
BULK EARTHWORKS	SITE SECTIONS
SY22-086-C-0100	ROADWORKS AND DRAINAGE PLANS
SITE SECTIONS	SY22-086-C-0130
SY22-086-C-0130	SY22-086-C-0200
ROADWORKS AND DRAINAGE PLANS	SY22-086-C-0201
SY22-086-C-0200	ROADWORKS AND DRAINAGE PLAN SHEET 1
SY22-086-C-0201	ROADWORKS AND DRAINAGE PLAN SHEET 2
ROADWORKS LONGITUDINAL SECTIONS	SY22-086-C-0240
SY22-086-C-0240	ROADWORKS LONGITUDINAL SECTION
SITEWORKS DETAILS	SY22-086-C-0330
SY22-086-C-0330	SITEWORKS DETAILS
EROSION AND SED CONTROL	SY22-086-C-0700
SY22-086-C-0700	EROSION AND SEDIMENTATION CONTROL PLAN
SY22-086-C-0750	EROSION AND SEDIMENTATION CONTROL DETAILS

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BAR SCALES					CLIENT	EQUIS ENERGY AUSTRALIA	PROJECT	CALALA BESS	TITLE	COVER SHEET LOCALITY PLAN AND DRAWING INDEX	STATUS				SKY Engineering & Project Management ABN / 72646014342 P / +61 435 144 005 E / admin@skyeng.com.au www.skyeng.com.au Project No. SY22-086 Drawing No. -C-0001 Issue A
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Height Datum AHD	Grid MGA20	SCALE NTS AT A1 SIZE													
REVISIONS															



LEGEND

EXISTING

LOT 17/DP629969 CADASTRAL BOUNDARY

EXISTING CADASTRAL BOUNDARY

OH

POWER (OVERHEAD) TRANSMISSION LINE

T

EXISTING TELSTRATREE

42.00

EXISTING CONTOURS

NEW

LIMITS OF WORKS BOUNDARYBATTER

42.00

DESIGN SURFACE CONTOURS

DEPTH RANGE LEGEND		
Lower_value	Upper_value	Colour
-100	to -4.0	m
-4.0	to -3.5	m
-3.5	to -3.0	m
-3.0	to -2.5	m
-2.5	to -2.0	m
-2.0	to -1.5	m
-1.5	to -1.0	m
-1.0	to -0.5	m
-0.5	to 0.0	m
0.0	to 0.5	m
0.5	to 1.0	m
1.0	to 1.5	m
1.5	to 2.0	m
2.0	to 2.5	m
2.5	to 3.0	m
3.0	to 3.5	m
3.5	to 4.0	m
4.0	to 100	m

EARTHWORKS VOLUMES

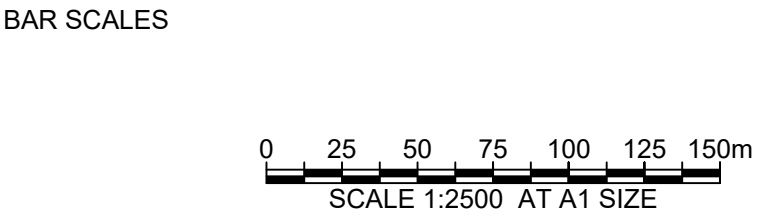
TOTAL CUT	-35 605m³
TOTAL FILL	37 847 m³
BALANCE	2 241m³ (IMP REQUIRED)

- NOTES
- THE ABOVE VOLUMES ARE CALCULATED WITH THE FOLLOWING ASSUMPTIONS
- FINISHED SURFACE LEVEL (-200mm)
 - ASSUMED PAVEMENT DEPTH OF 150mm DGB20 WITH 50mm BLUE METAL (SUBJECT TO GEOTECHNICAL ADVICE)
 - EXISTING STRIP SURFACE (-150mm)
- EARTHWORKS VOLUMES DENOTED ARE APPROXIMATE ONLY AND HAVE BEEN CALCULATED BETWEEN THE FINISHED SURFACE LEVEL (-200mm) AND THE EXISTING STRIPPING SURFACE LEVEL(-150mm). THE VOLUMES DO NOT TAKE INTO ACCOUNT -
- PAVEMENT DEPTHS
 - BULKING FACTORS OF REMOVED CUT
 - REMOVAL AND/OR REMEDIATION OF ANY EXISTING UNCONTROLLED FILL
 - PROPOSED LANDSCAPING
 - STORMWATER AND UTILITIES TRENCHING
 - EXISTING DAMS OR WATER BODIES WHERE BY THE BASE HAS NOT BEEN SURVEYED DUE TO THE PRESENCE OF WATER AT TIME OF SURVEY

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CALALA BESS

TITLE

EARTHWORKS CUT FILL PLAN

STATUS			
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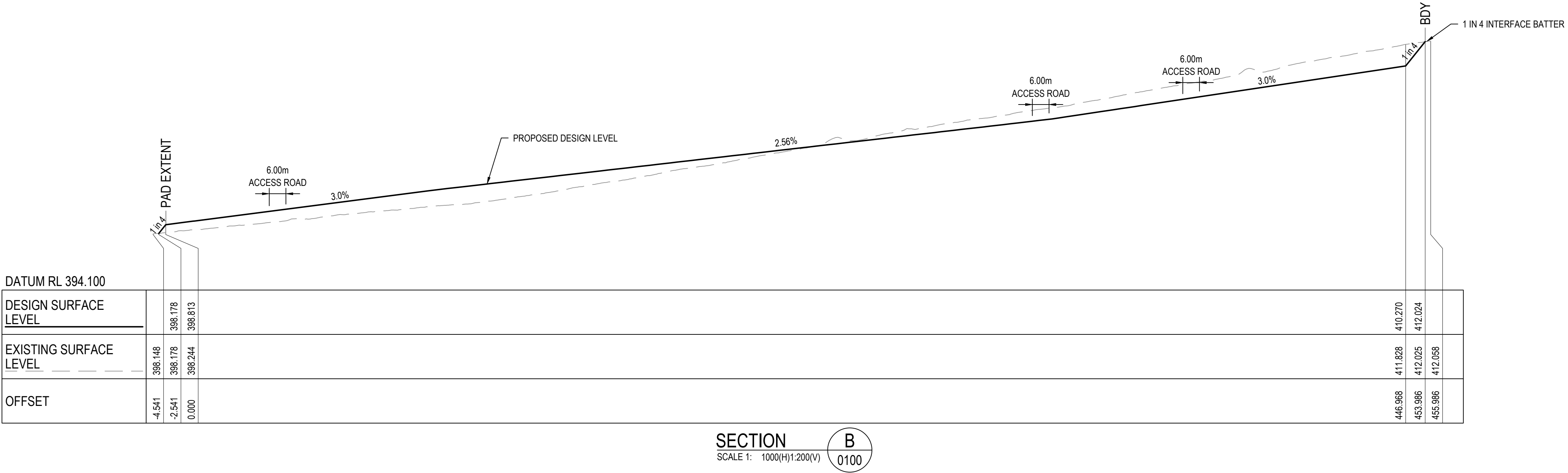
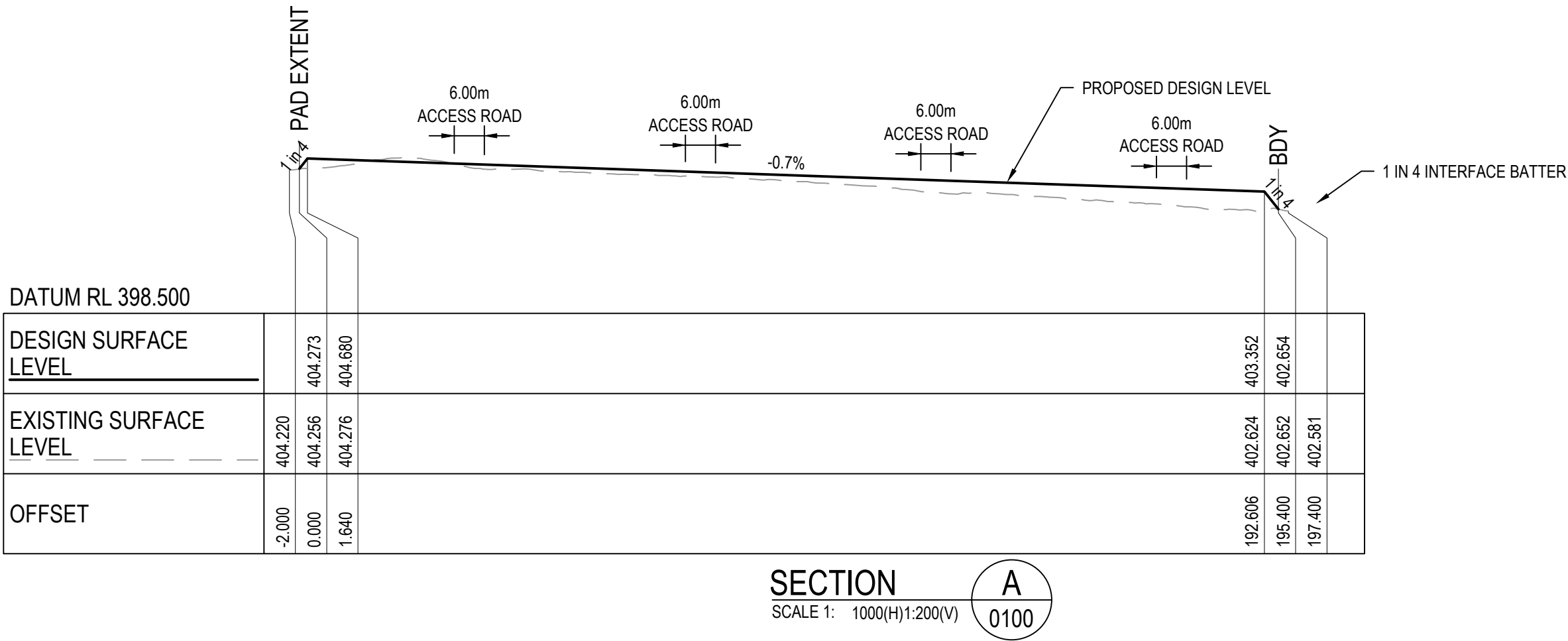
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Project No.
SY22-086

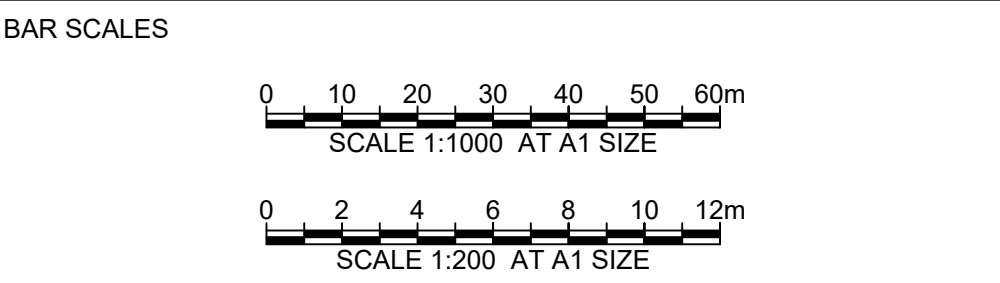
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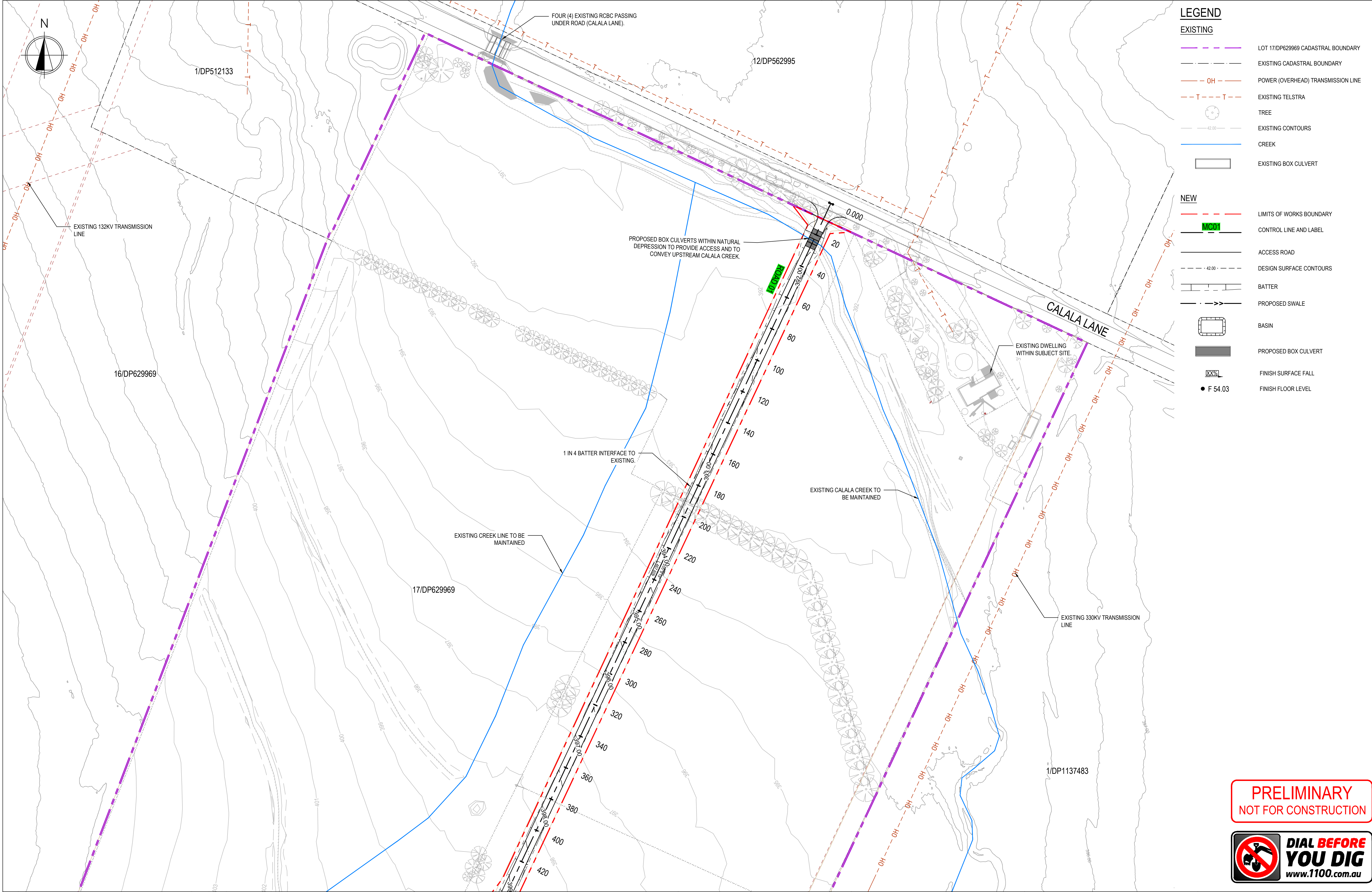
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CALALA BESS

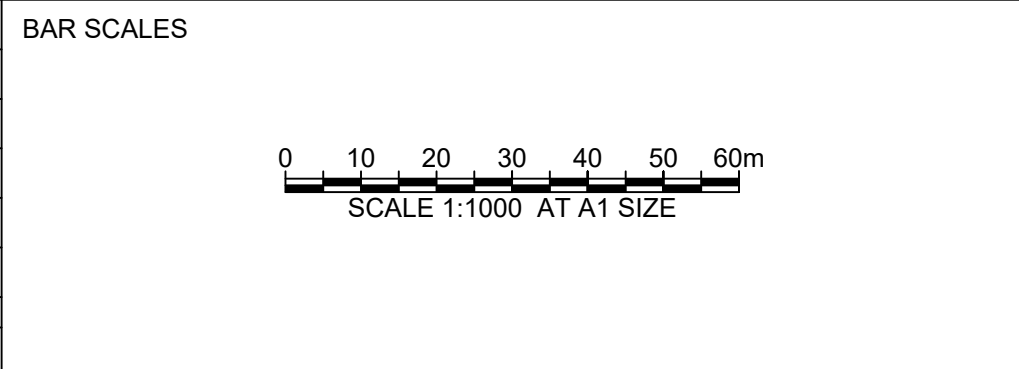
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SITE SECTIONS

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CALALA BESS

TITLE

SITE SECTIONS

STATUS			
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Height Datum AHD	Grid MGA20	SCALE 1:1000 1:200	AT A1 SIZE

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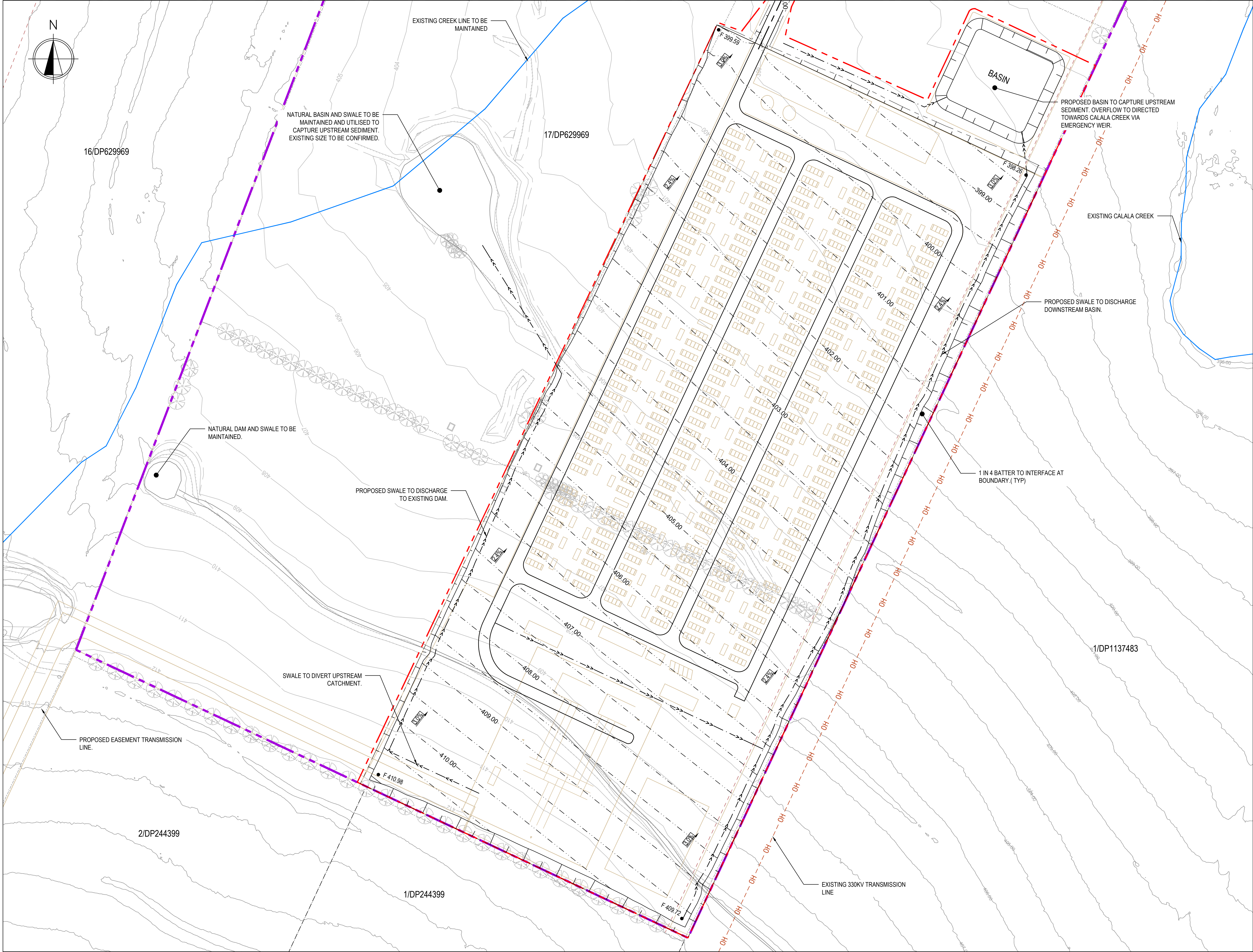
Project No.
SY22-086

Drawing No.
-C-0130

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LEGEND	
EXISTING	
	LOT 17/DP629969 CADASTRAL BOUNDARY
	EXISTING CADASTRAL BOUNDARY
	POWER (OVERHEAD) TRANSMISSION LINE
	EXISTING TELSTRA
	TREE
	EXISTING CONTOURS
	CREEK
	EXISTING BOX CULVERT
NEW	
	LIMITS OF WORKS BOUNDARY
	CONTROL LINE AND LABEL
	ACCESS ROAD
	DESIGN SURFACE CONTOURS
	BATTER
	PROPOSED SWALE
	BASIN
	PROPOSED BOX CULVERT
	FINISH SURFACE FALL
	FINISH FLOOR LEVEL

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BAR SCALES	
	SCALE 1:1000 AT A1 SIZE

CLIENT
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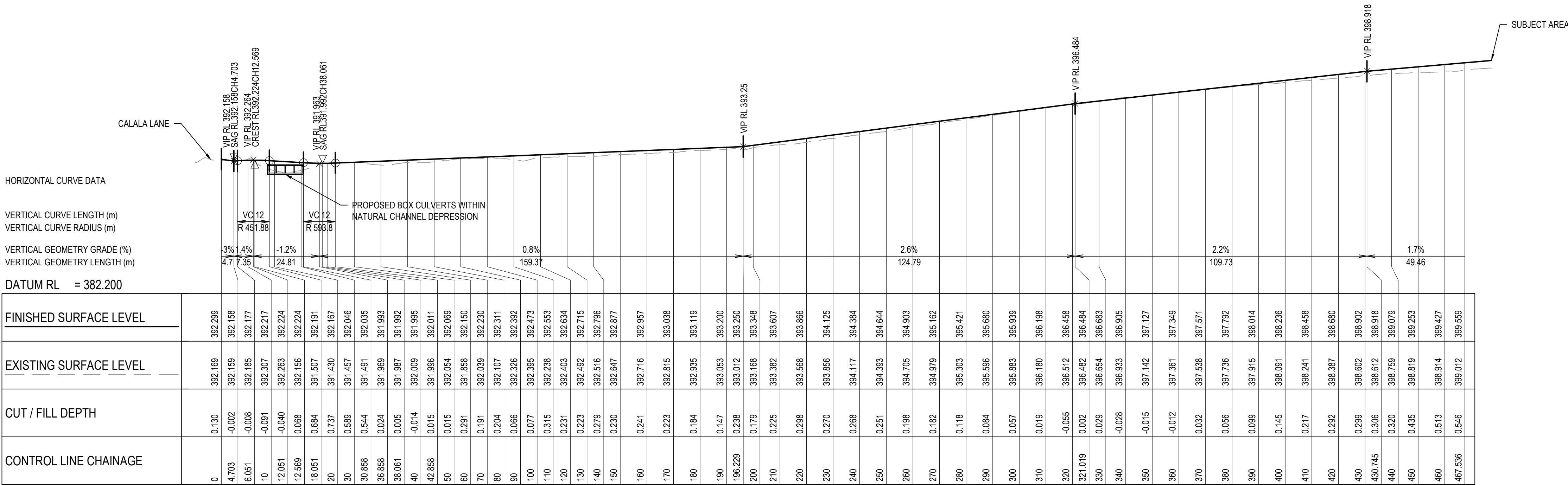
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CALALA BESS

TITLE
SITE SECTIONS

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Height Datum AHD	Grid MGA20	SCALE 1:1000 1:200	AT A1 SIZE

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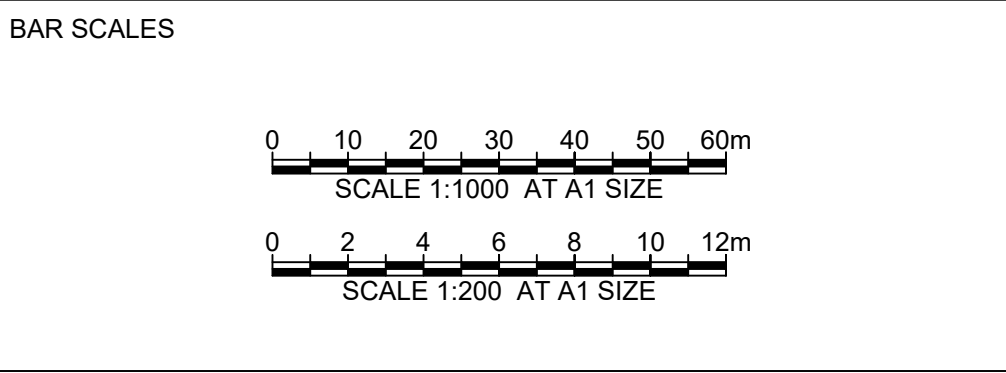


A1 SCALE: H 1:1000, V 1:200

LONGITUDINAL SECTION ROAD01

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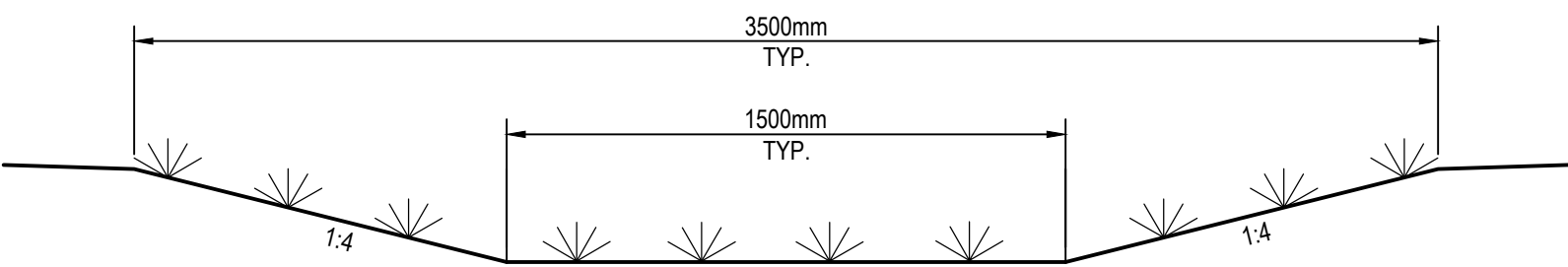
CALALA BESS

TITLE

ROADWORKS LONGITUDINAL SECTION

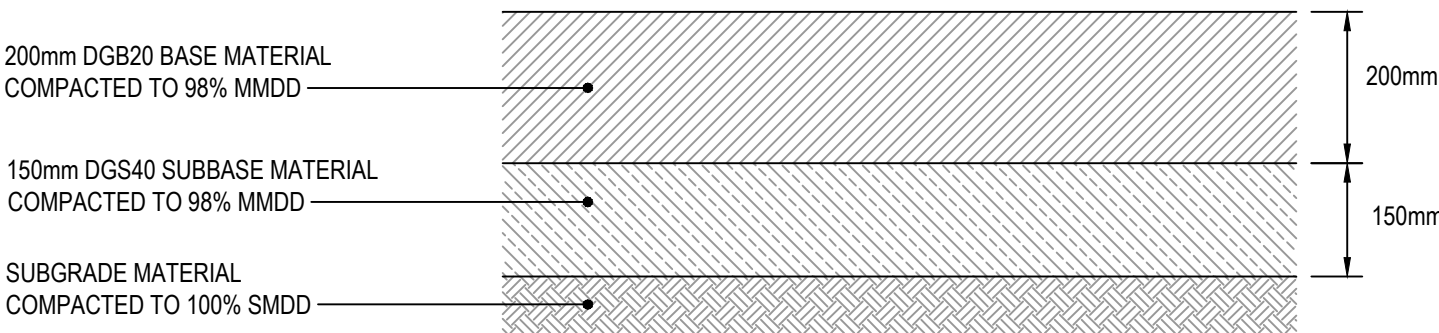
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Height Datum AHD	Grid MGA20	SCALE 1:1000 1:200	AT A1 SIZE

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GRASSED OVERLAND FLOW CHANNEL

SCALE 1:20



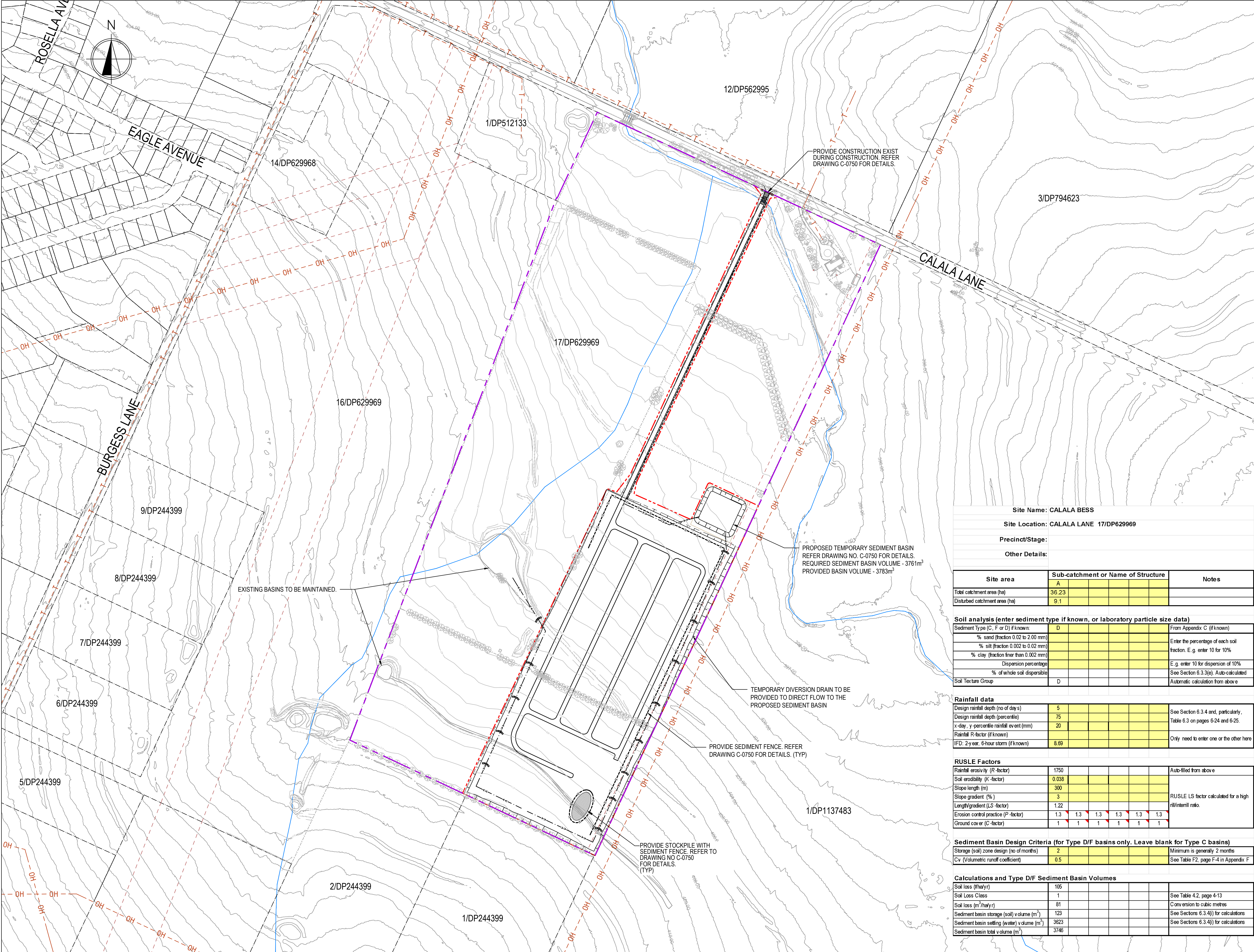
PAVEMENT TYPE - ACCESS ROAD

SCALE 1:10

NOTE:
1. ASSUMED CBR OF 3%. SUBJECT TO GEOTECHNICAL REPORT.

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				00.10.20.30.40.50.6m SCALE 1:10 AT A1 SIZE 00.20.40.60.80.1.01.2m SCALE 1:20 AT A1 SIZE				EQUIS ENERGY AUSTRALIA				CALALA BESS				SITWORKS DETAILS				ISSUED FOR APPROVAL							
A	ISSUE FOR APPROVAL			AL	PM	30/08/2023											Drawn AL				Designed AL		Checked DM		Approved PM		
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P1	ISSUE FOR INFORMATION			AL	FX	08/05/2023																					
REV	DESCRIPTION			BY	APRVD	DATE																					
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LEGEND

EXISTING

LOT 17/DP629969 CADASTRAL BOUNDARY

EXISTING CADASTRAL BOUNDARY

OH

T

42.00

NEW

X

Site Name: CALALA BESS

Site Location: CALALA LANE 17/DP629969

Precinct/Stage:

Other Details:

Site area	Sub-catchment or Name of Structure	Notes
Total catchment area (ha)	A	
Disturbed catchment area (ha)	36.23	
	9.1	

Soil analysis (enter sediment type if known, or laboratory particle size data)

Sediment Type (C, F or D) if known:	D	From Appendix C (if known)
% sand (fraction 0.02 to 2.00 mm)		Enter the percentage of each soil fraction. E.g. enter 10 for 10%
% silt (fraction 0.002 to 0.02 mm)		
% clay (fraction finer than 0.002 mm)		
Dispersion percentage		E.g. enter 10 for dispersion of 10%
% of whole soil dispersible		See Section 6.3.3(e) Auto-calculated
Soil Texture Group	D	Automatic calculation from above

Rainfall data

Design rainfall depth (no of days)	5	See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
Design rainfall depth (percentile)	75	
x-day, y-percentile rainfall event (mm)	20	
Rainfall R-factor (if known)		Only need to enter one or the other here
IFD: 2-year, 6-hour storm (if known)	8.69	

RUSLE Factors

Rainfall erosivity (R-factor)	1750	Auto-filled from above
Soil erodibility (K-factor)	0.038	
Slope length (m)	300	
Slope gradient (%)	3	
Length/gradient (LS-factor)	1.22	RUSLE LS factor calculated for a high n/intermill ratio.
Erosion control practice (P-factor)	1.3	1.3 1.3 1.3 1.3 1.3 1.3
Ground cover (C-factor)	1	1 1 1 1 1 1

Sediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)

Storage (soil) zone design (no of months)	2	Minimum is generally 2 months
Cv (Volumetric runoff coefficient)	0.5	See Table F2, page F-4 in Appendix F

Calculations and Type D/F Sediment Basin Volumes

Soil loss (t/ha/yr)	105	
Soil Loss Class	1	See Table 4.2, page 4-13
Soil loss (m ³ /ha/yr)	81	Conversion to cubic metres
Sediment basin storage (soil) volume (m ³)	123	See Sections 6.3.4(i) for calculations
Sediment basin settling (water) volume (m ³)	3623	See Sections 6.3.4(i) for calculations
Sediment basin total volume (m ³)	3746	

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BAR SCALES

0 25 50 75 100 125 150m

SCALE 1:2500 AT A1 SIZE

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EQUIS ENERGY AUSTRALIA

PROJECT

CALALA BESS

TITLE

EROSION AND SEDIMENTATION CONTROL PLAN

STATUS

ISSUED FOR APPROVAL

Drawn	Designed	Checked	Approved
AL	AL	DM	PM
Height Datum	Grid	SCALE	
AHD	MGA20	1:2500	AT A1 SIZE

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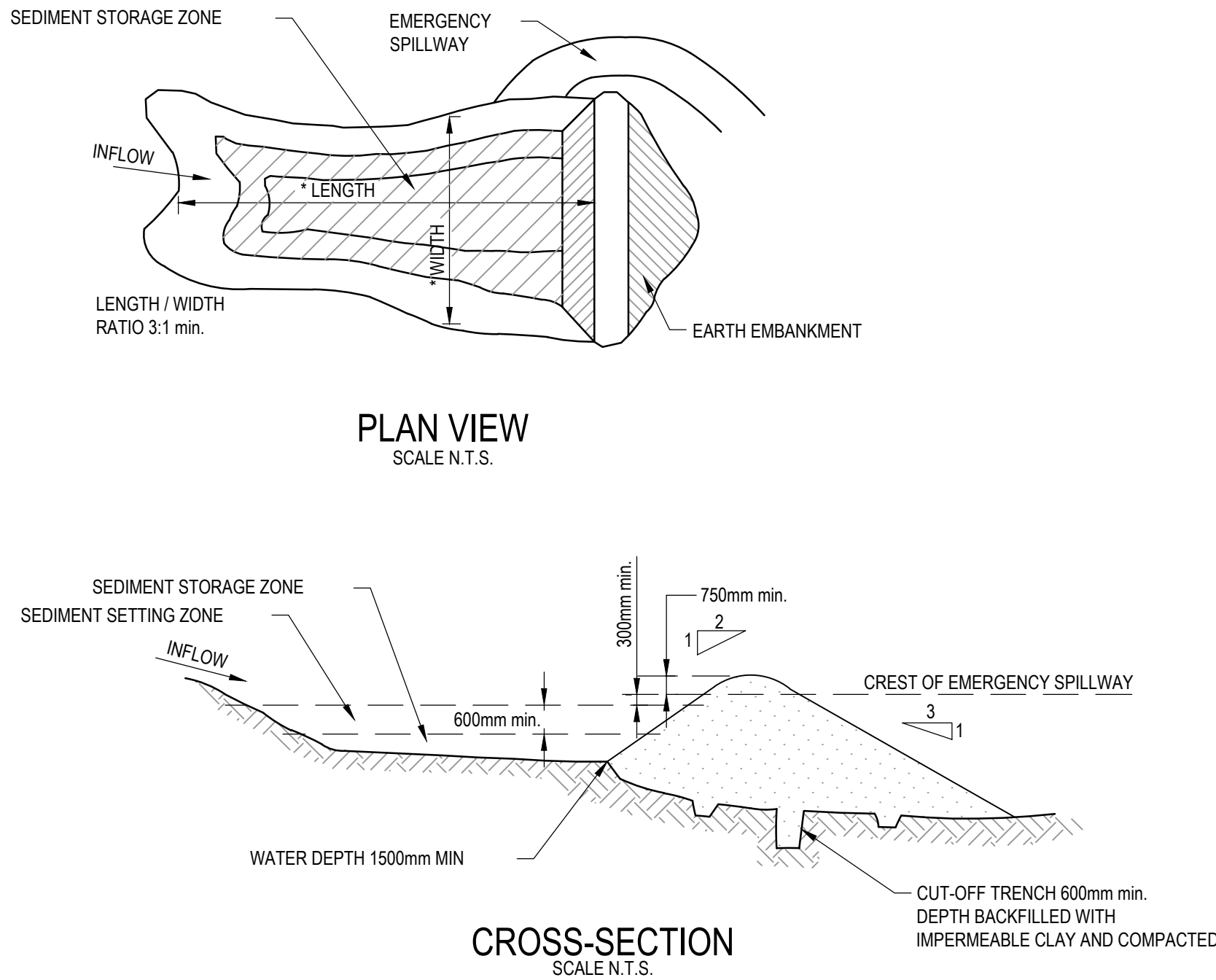
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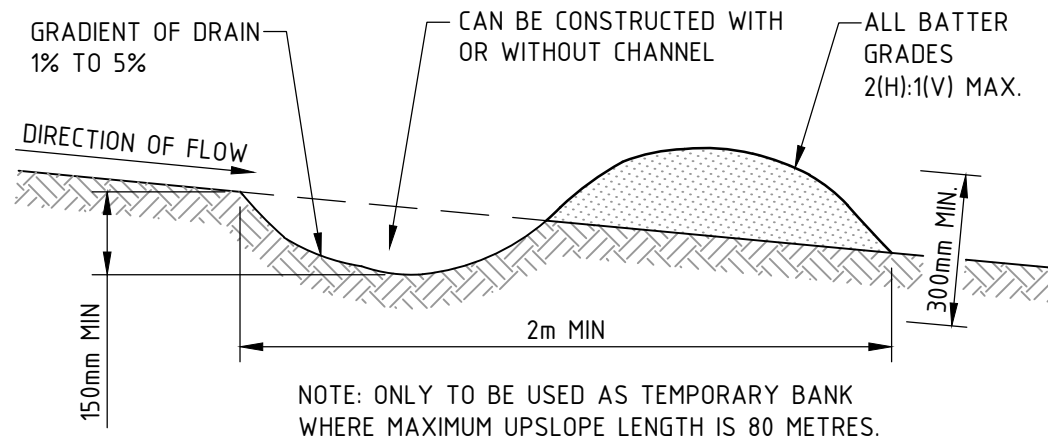
Project No.	Drawing No.	Issue
SY22-086	-C-0 700	A



EARTH BASIN WET CONSTRUCTION NOTES:

1. REMOVE ALL VEGETATION AND TOPSOIL FROM UNDER THE DAM WALL AND FROM WITHIN THE STORAGE AREA.
2. CONSTRUCT A CUT-OFF TRENCH 500mm DEEP AND 1,200mm WIDE ALONG THE CENTRELINE OF THE EMBANKMENT EXTENDING TO A POINT ON THE GULLY WALL LEVEL WITH THE RISER CREST.
3. MAINTAIN THE TRENCH FREE OF WATER AND RECOMPACT THE MATERIALS WITH EQUIPMENT AS SPECIFIED IN THE SWMP TO 95% STANDARD PROCTOR DENSITY.
4. SELECT FILL FOLLOWING THE SWMP THAT IS FREE OF ROOTS, WOOD, ROCK, LARGE STONE OR FOREIGN MATERIAL.
5. PREPARE THE SIRE UNDER THE EMBANKMENT BY RIPPING TO AT LEAST 100mm TO HELP BOND COMPACTED FILL TO THE EXISTING SUBSTRATE.
6. SPREAD THE FILL IN 100mm TO 150mm LAYERS AND COMPACT IT AT OPTIMUM MOISTURE CONTENT FOLLOWING THE SWMP.
7. CONSTRUCT THE EMERGENCY SPILLWAY.
8. REHABILITATE THE STRUCTURE FOLLOWING THE SWMP.

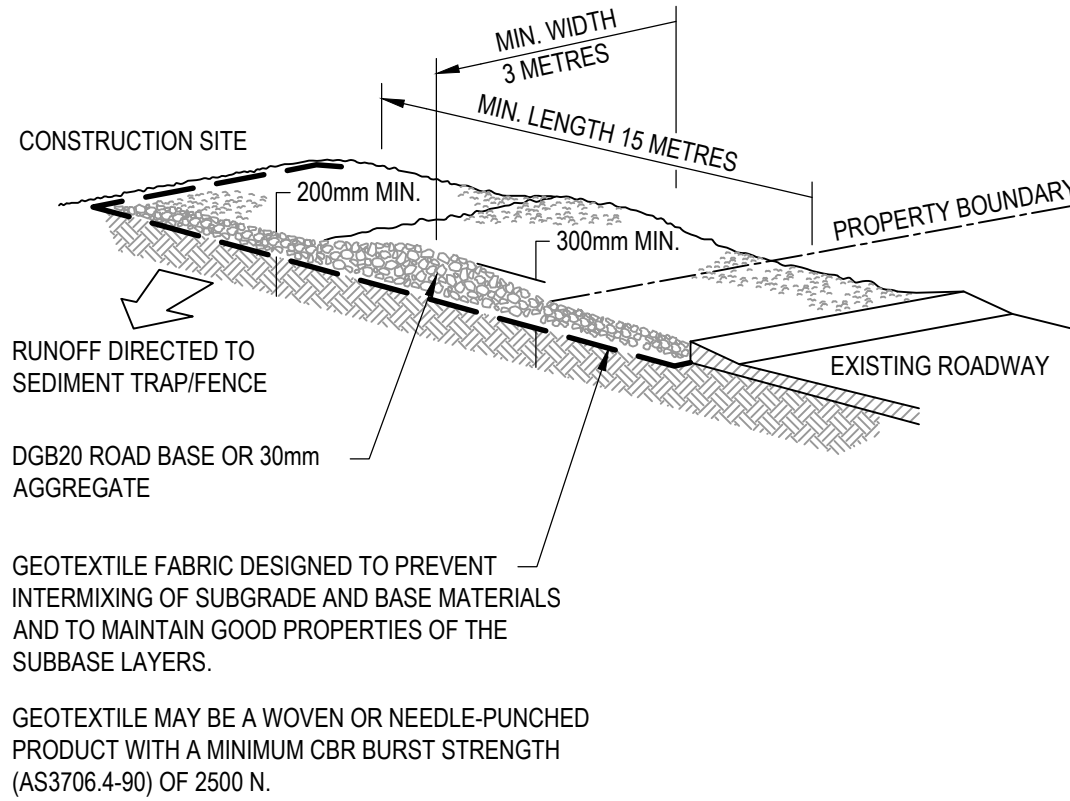
EARTH BASIN - WET
SCALE: N.T.S.



EARTH BANK CONSTRUCTION NOTES:

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

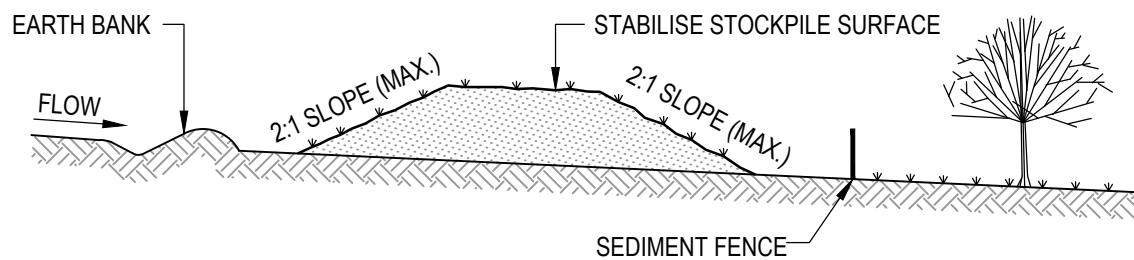
EARTH BANK (LOW FLOW)
SCALE N.T.S



STABILISED SITE ACCESS CONSTRUCTION NOTES:

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

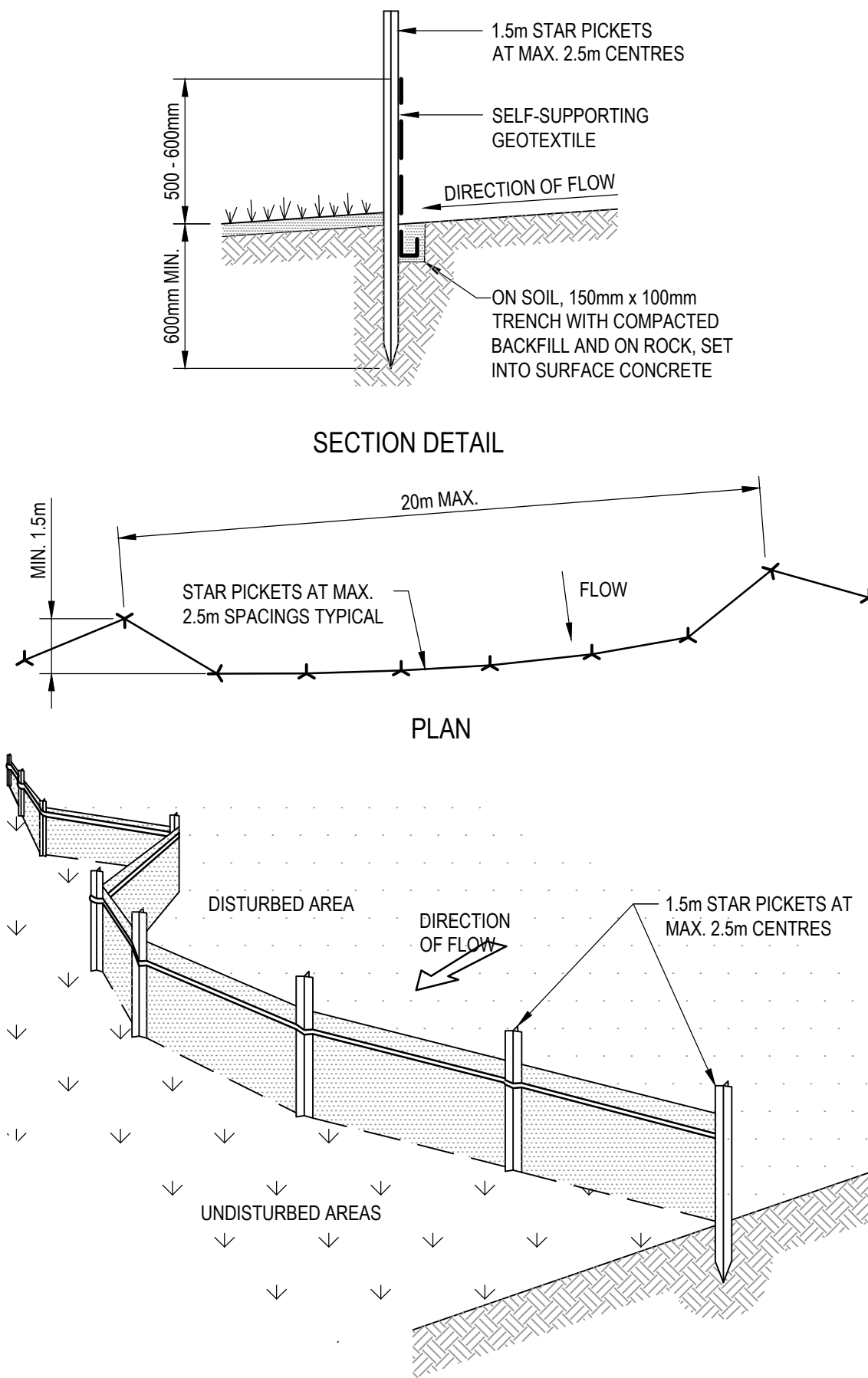
STABILISED SITE ACCESS
SCALE N.T.S



STOCKPILE CONSTRUCTION NOTES:

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

STOCKPILES
SCALE N.T.S



SEDIMENT FENCE CONSTRUCTION NOTES:

1. 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.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND AT 2.5m INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. 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.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE
SCALE N.T.S

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REV	DESCRIPTION	BY	APRVD	DATE						
REVISIONS										
						EQUIS ENERGY AUSTRALIA	CALALA BESS	EROSION AND SEDIMENTATION CONTROL DETAILS	ISSUED FOR APPROVAL	
									Drawn AL Designed AL Checked DM Approved PM	
									Height Datum AHD Grid MGA20 SCALE NTS AT A1 SIZE	