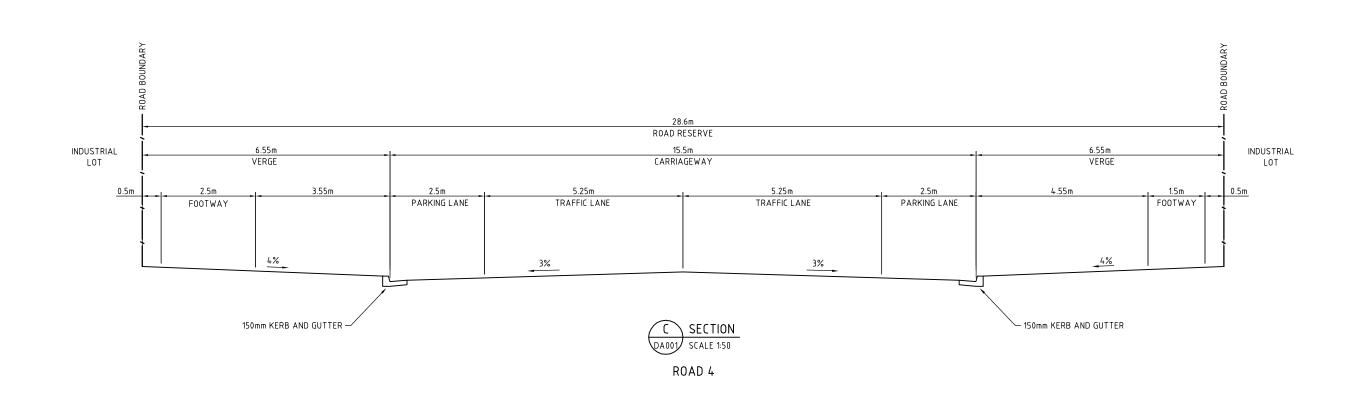
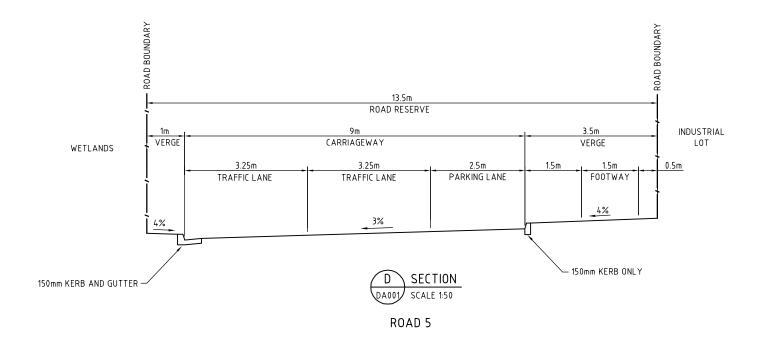


ROAD 2 & ROAD 3

								DO NOT SCALE	Drawn S	S. ATKINS	Designed F. CARROZZA		GOODMAN	
				+	0 0.5 1.0 1.5 2.0 2.5m		GHD CLIENTS PEOPLE PERFORMANCE	Conditions of Use.	Drafting Check		Design Check	Project	BUNGARRIBEE ESTATE - HUNTINGW	OOD WEST
В	CONCEPT DESIGN REVISED TO REFERENCE METCASH APPLICATION SA	CM* (CM* 15.09.	0	SCALE 1:50 AT ORIGINAL SIZE	odman	Level 6, 20 Smith Street Parramatta NSW 2150 Australia	This document may only be used by GHD's client (and any other person who GHD has agreed can use this document)	Approved			Title	CIVIL WORKS TYPICAL ROAD CROSS SECTIONS - S	HEET 1 OF 2
A No		FC* (CM* 08.07.0 proved Date	9			PO Box 788 Parramatta NSW 2124 T 61 2 8898 8800 F 61 2 8898 8810 E sydmail@ghd.com W www.ghd.com	for the purpose for which it was prepared and must not be used by any other person or for any other purpose.	Scale	AS SHOWN	This Drawing must not be used for Construction unless signed as Approved	Original Size	Drawing No: 21-18115-DA002	Rev: B





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No	Pavision Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Chacked	Approved	Date

0 0.5 1.0 1.5 2.0 2.5m SCALE 1:50 AT ORIGINAL SIZE



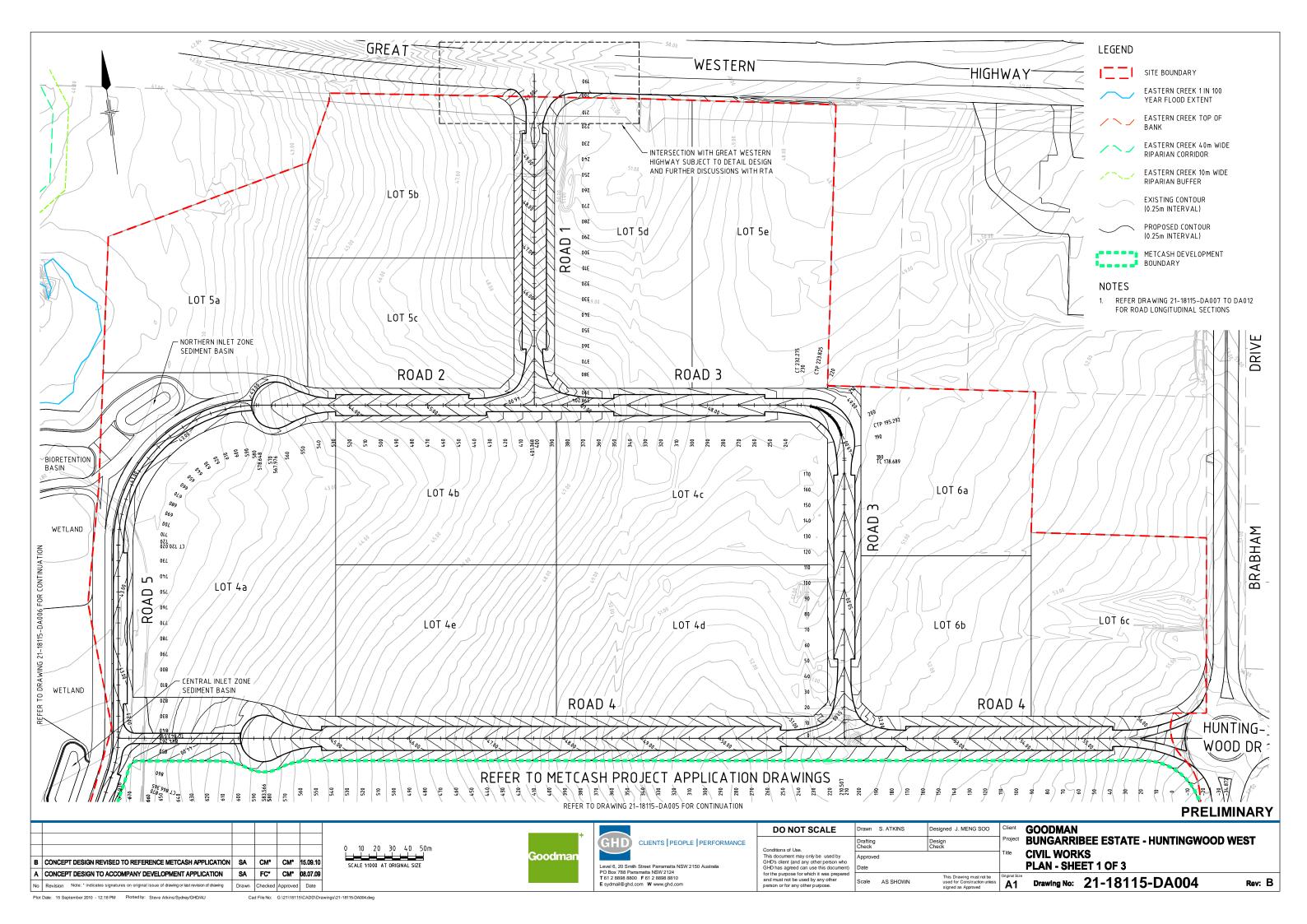
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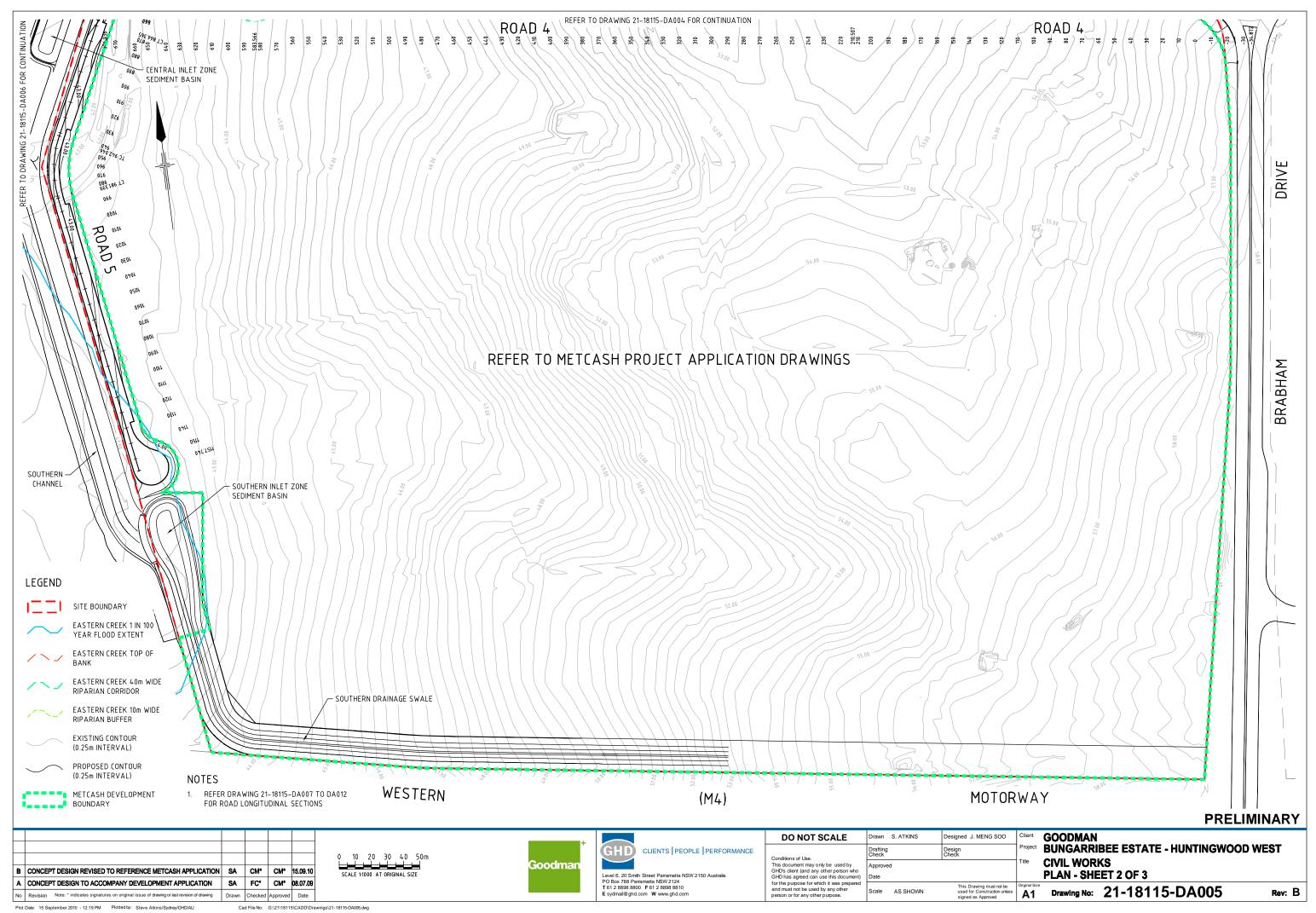
Level 6, 20 Smith Street Parramatta NSW 2150 Australia PO Box 788 Parramatta NSW 2124 T 612 8898 8800 F 61 2 8898 8810 E sydmai@ghd.com W www.ghd.com

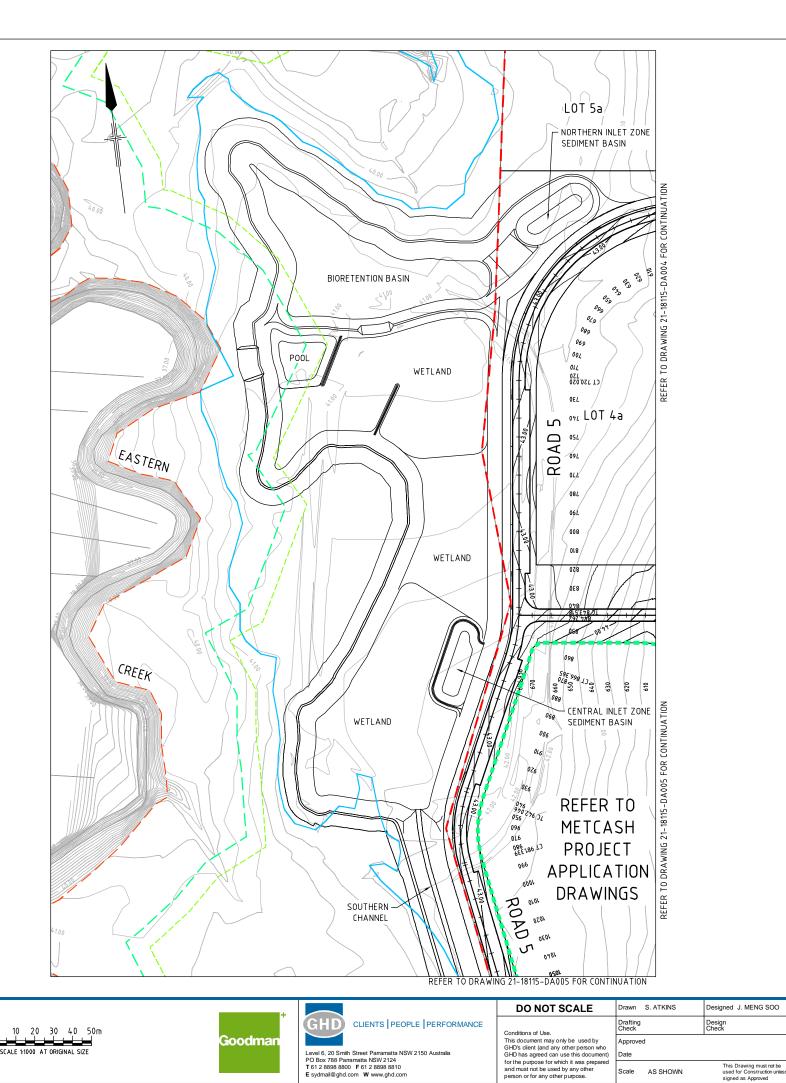
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GOODMAN
BUNGARRIBEE ESTATE - HUNTINGWOOD WEST
CIVIL WORKS
TYPICAL ROAD CROSS SECTIONS - SHEET 2 OF 2

A1 Drawing No: 21-18115-DA003







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B CONCEPT DESIGN REVISED TO REFERENCE METCASH APPLICATION SA CM* CM* 15.09.10

A CONCEPT DESIGN TO ACCOMPANY DEVELOPMENT APPLICATION SA FC* CM* 08.07.09

Plot Date: 15 September 2010 - 12:19 PM Plotted by: Steve Atkins/Sydney/GHD/AU

BUNGARRIBEE ESTATE - HUNTINGWOOD WEST

CIVIL WORKS PLAN - SHEET 3 OF 3

GOODMAN

This Drawing must not be used for Construction urbsy. A1 Drawing No: 21-18115-DA006

LEGEND

SITE BOUNDARY

EASTERN CREEK 1 IN 100 YEAR FLOOD EXTENT

EASTERN CREEK TOP OF

EASTERN CREEK 40m WIDE RIPARIAN CORRIDOR EASTERN CREEK 10m WIDE RIPARIAN BUFFER EXISTING CONTOUR (0.25m INTERVAL)

PROPOSED CONTOUR

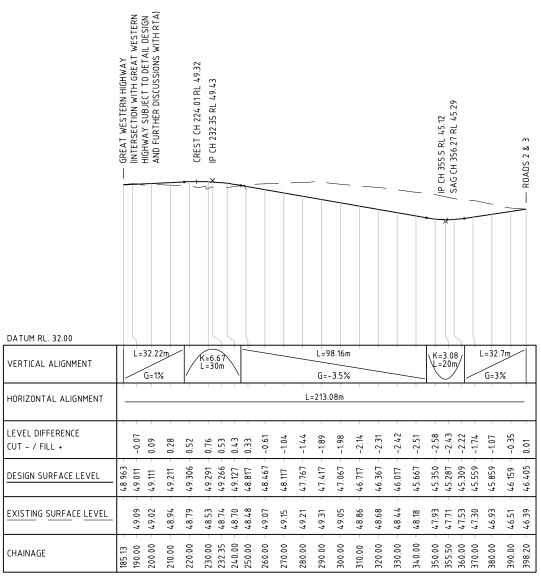
1. REFER DRAWING 21–18115–DA007 TO DA012 FOR ROAD LONGITUDINAL SECTIONS

(0.25m INTERVAL) METCASH DEVELOPMENT

BOUNDARY

PRELIMINARY

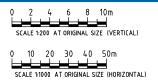
Rev: B



HORZ 1:1000 VERT 1:200

PRELIMINARY

В	CONCEPT DESIGN REVISED TO REFERENCE METCASH APPLICATION	SA	CM*	CM*	15.09.10
Α	CONCEPT DESIGN TO ACCOMPANY DEVELOPMENT APPLICATION	SA	FC*	CM*	08.07.09
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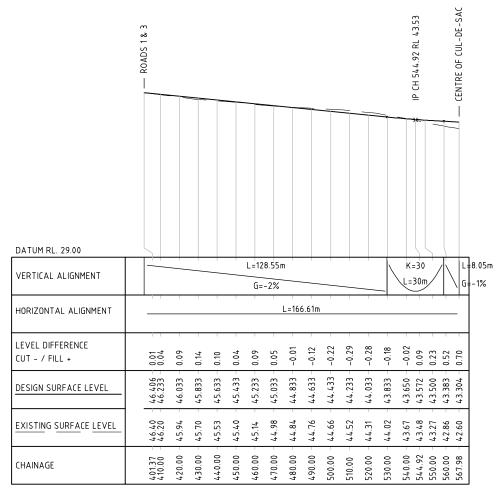
DO NOT SCALE

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	Approved	d		Title
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d	Scale	AS SHOWN	This Drawing must not be used for Construction unless	Original Size

GOODMAN
BUNGARRIBEE ESTATE - HUNTINGWOOD WEST
CIVIL WORKS
ROAD 1 LONGITUDINAL SECTION

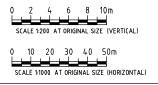
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A1 Drawing No: 21-18115-DA007



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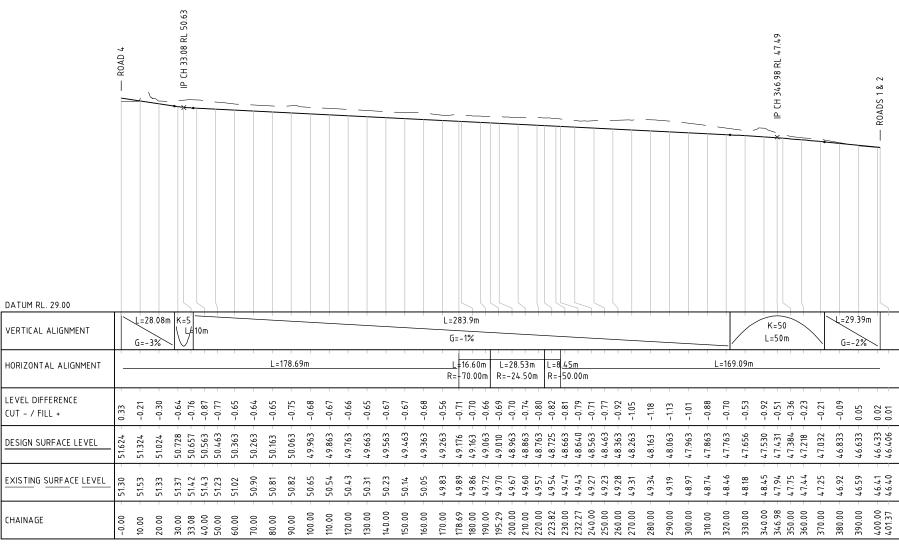


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t	GOODMAN							
ct								
	CIVIL WOR	KS						
		NGITUDINAL SECTION						
Size	Drawing No:	21-18115-DA008	Rev: B					



HORZ 1:1000 VERT 1:200

PRELIMINARY

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0 2 4 6 8 10m

SCALE 1:200 AT ORIGINAL SIZE (VERTICAL)

0 10 20 30 40 50m

SCALE 1:1000 AT ORIGINAL SIZE (HORIZONTAL)

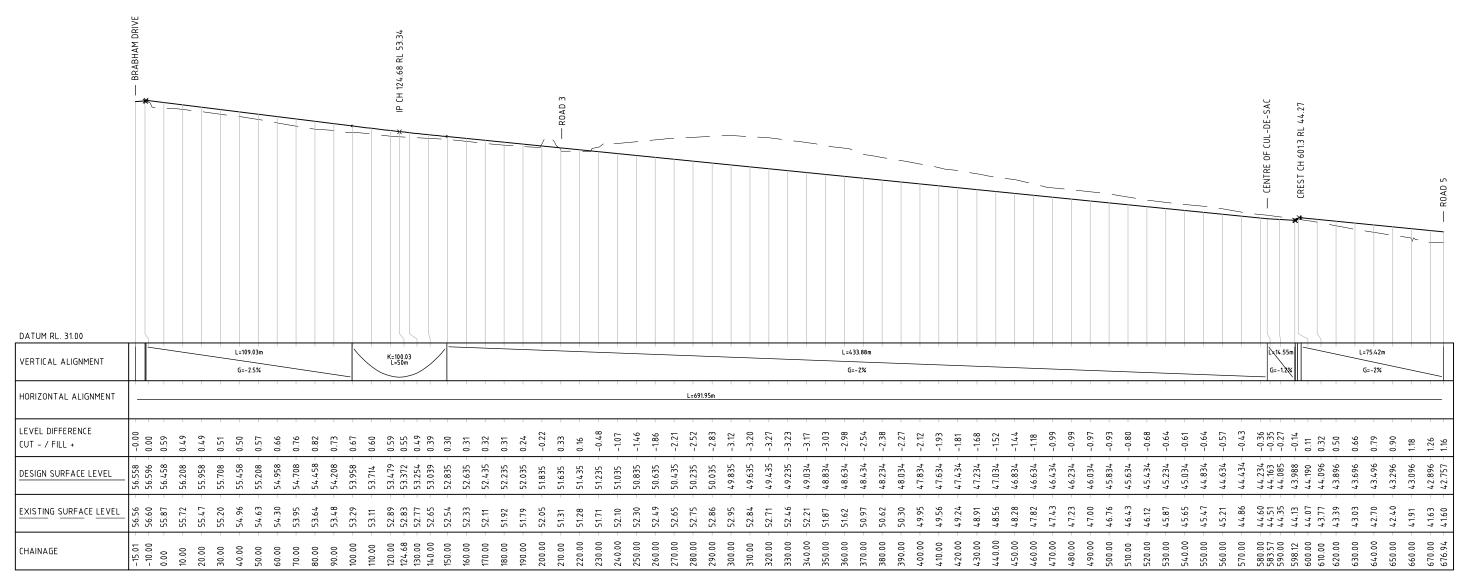


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GOODMAN
BUNGARRIBEE ESTATE - HUNTINGWOOD WEST
CIVIL WORKS
ROAD 3 LONGITUDINAL SECTION



HORZ 1:1000 VERT 1:200

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0 2 4 6 8 10m SCALE 1:200 AT ORIGINAL SIZE (VERTICAL) 10 20 30 40 50m SCALE 1:1000 AT ORIGINAL SIZE (HORIZONTAL)

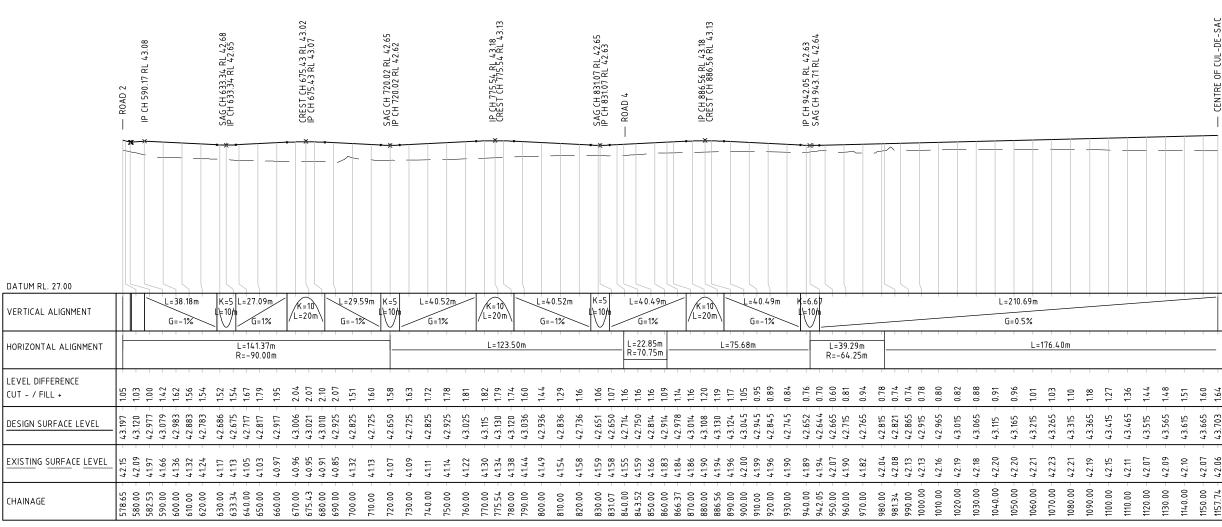


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GOODMAN BUNGARRIBEE ESTATE - HUNTINGWOOD WEST CIVIL WORKS
ROAD 4 LONGITUDINAL SECTION Rev: B



HORZ 1:1000 VERT 1:200

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0 2 4 6 8 10m SCALE 1:200 AT ORIGINAL SIZE (VERTICAL) SCALE 1:1000 AT ORIGINAL SIZE (HORIZONTAL)





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GOODMAN BUNGARRIBEE ESTATE - HUNTINGWOOD WEST CIVIL WORKS
ROAD 5 LONGITUDINAL SECTION

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Α	CONCEPT DESIGN TO ACCOMPANY DEVELOPMENT APPLICATION	SA	FC*	CM*	08.07.09
No	Revision Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Checked	Annroved	Date

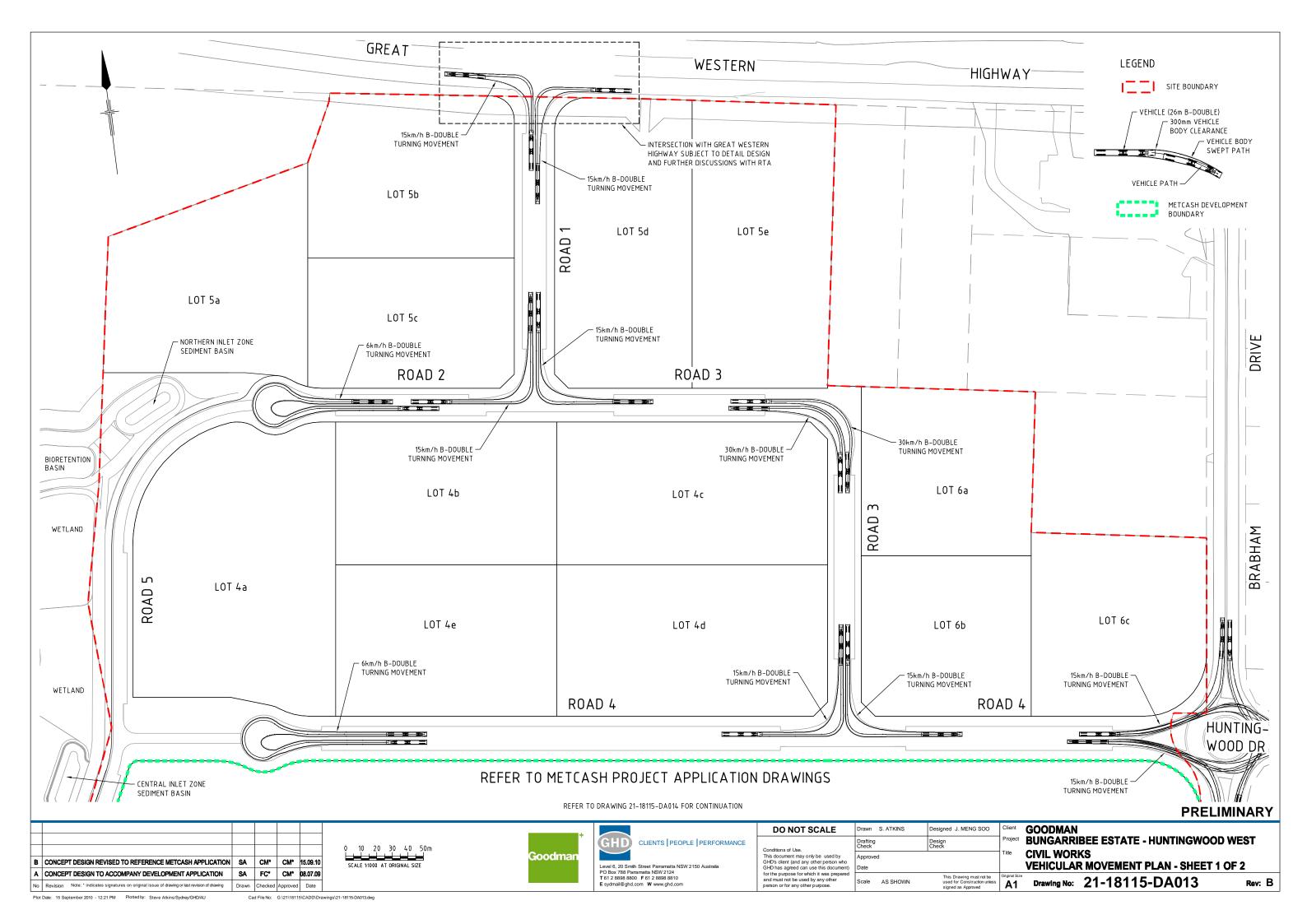
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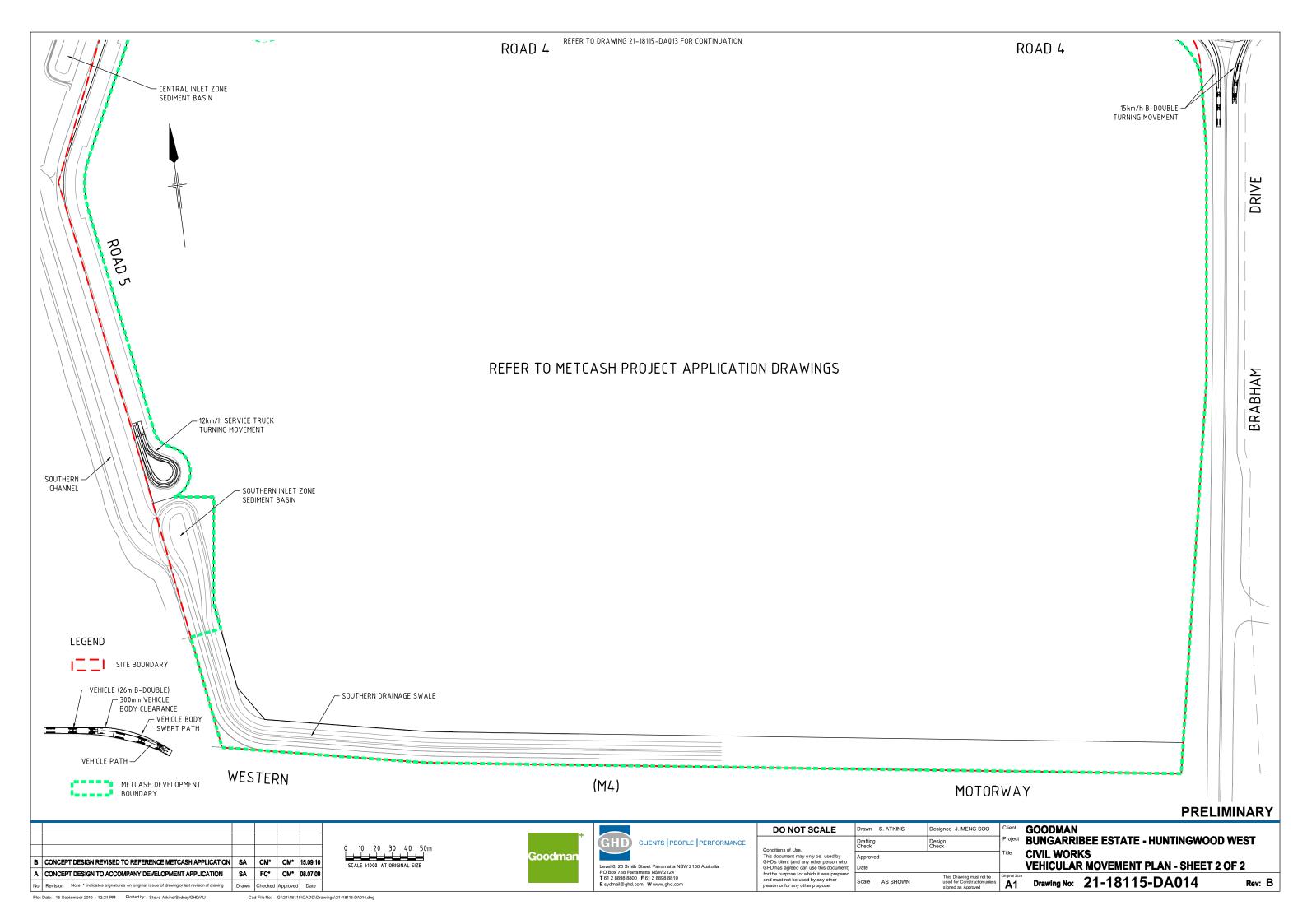


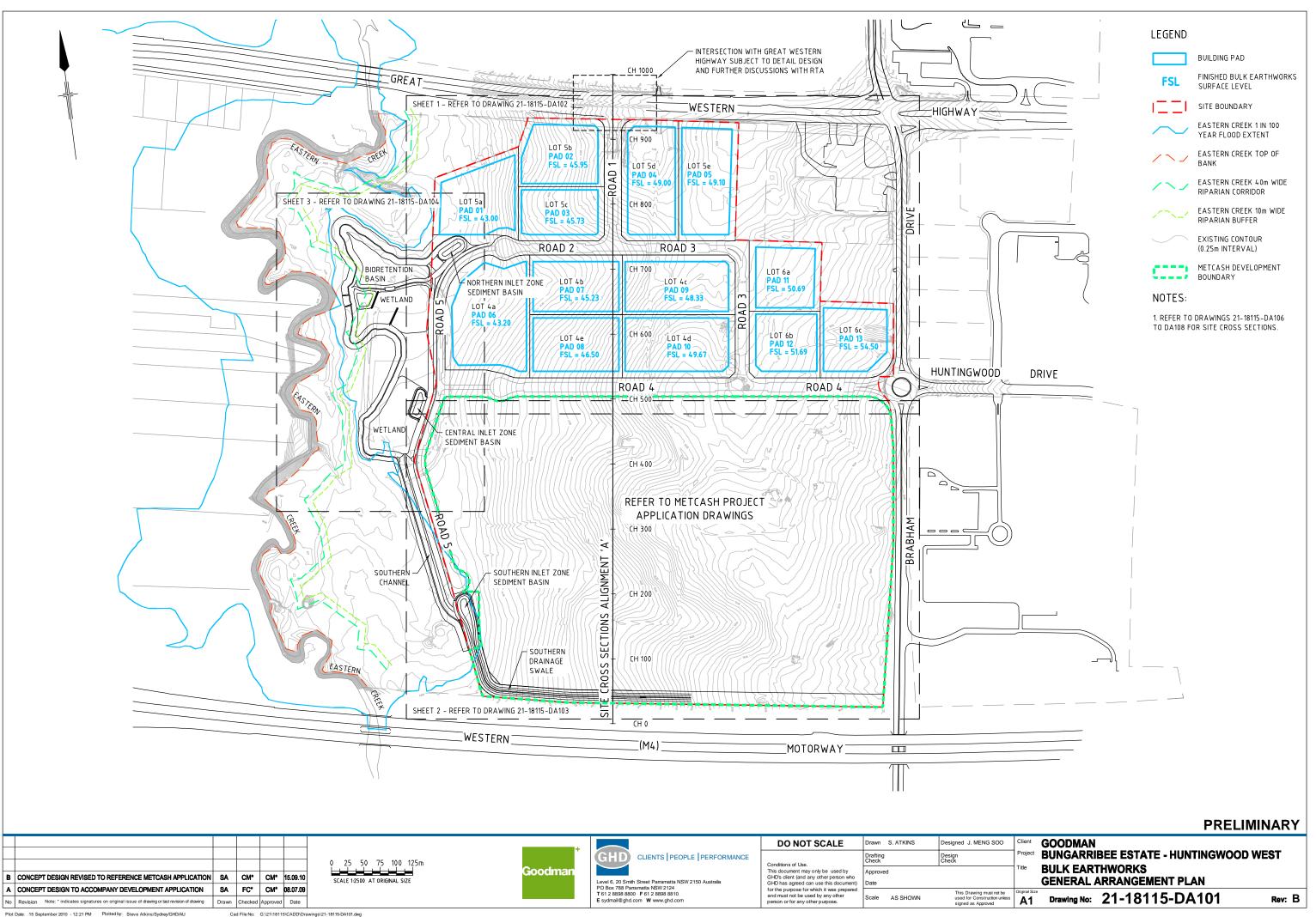
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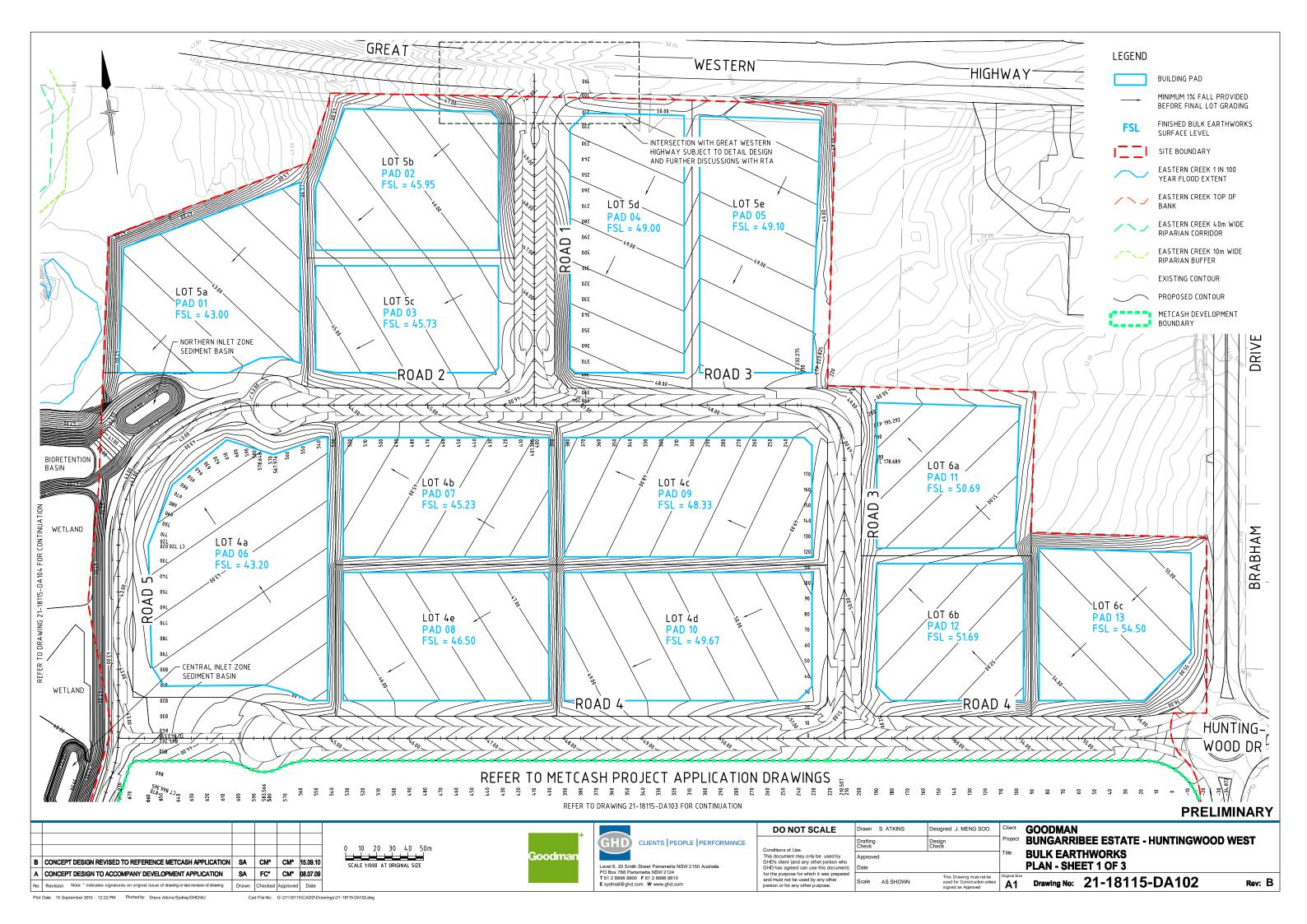
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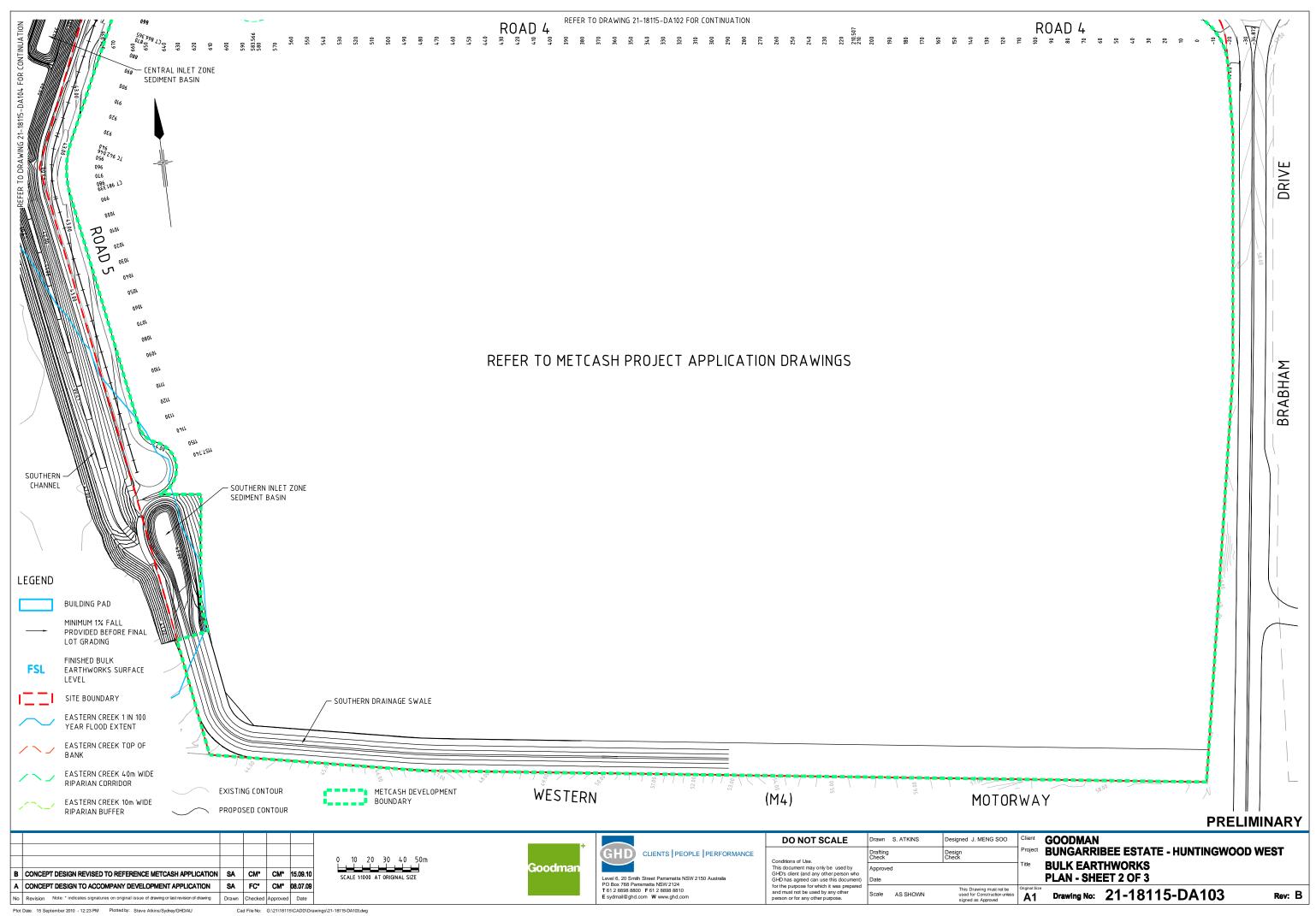
GOODMAN
Project BUNGARRIBEE ESTATE - HUNTINGWOOD WEST CIVIL WORKS
ROAD 6 LONGITUDINAL SECTION Rev: B

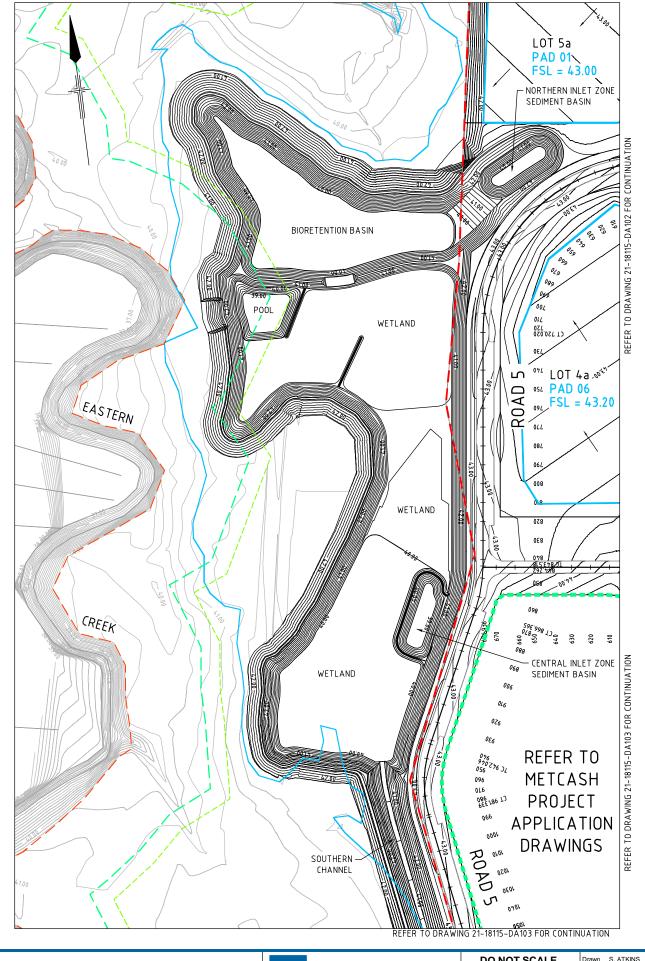












B CONCEPT DESIGN REVISED TO REFERENCE METCASH APPLICATION SA CM* CM* 15.09.10 A CONCEPT DESIGN TO ACCOMPANY DEVELOPMENT APPLICATION SA FC* CM* 08.07.09 No Revision Note: * indicates signatures on original issue of drawing or last revision of drawing Drawn Checked Approved Date



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GOODMAN BUNGARRI	BEE ESTATE - HUNTINGWOO	D WEST
BULK EAR ¹ PLAN - SHE		
Drawing No:	21-18115-DA104	Rev: B

LEGEND

BUILDING PAD

SITE BOUNDARY

MINIMUM 1% FALL PROVIDED BEFORE FINAL LOT GRADING

FINISHED BULK EARTHWORKS SURFACE LEVEL

EASTERN CREEK 1 IN 100 YEAR FLOOD EXTENT

EASTERN CREEK TOP OF BANK

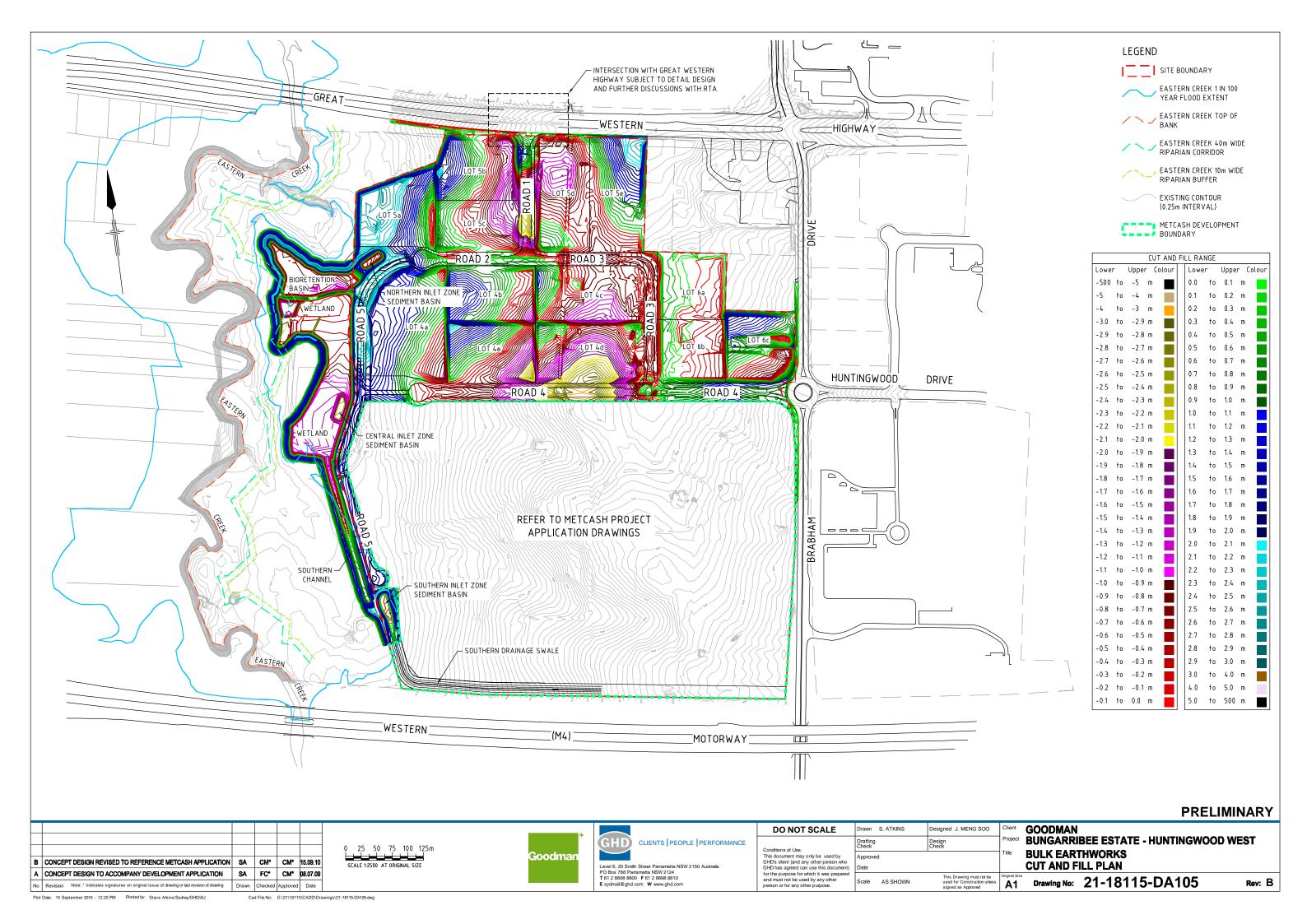
EASTERN CREEK 40m WIDE RIPARIAN CORRIDOR

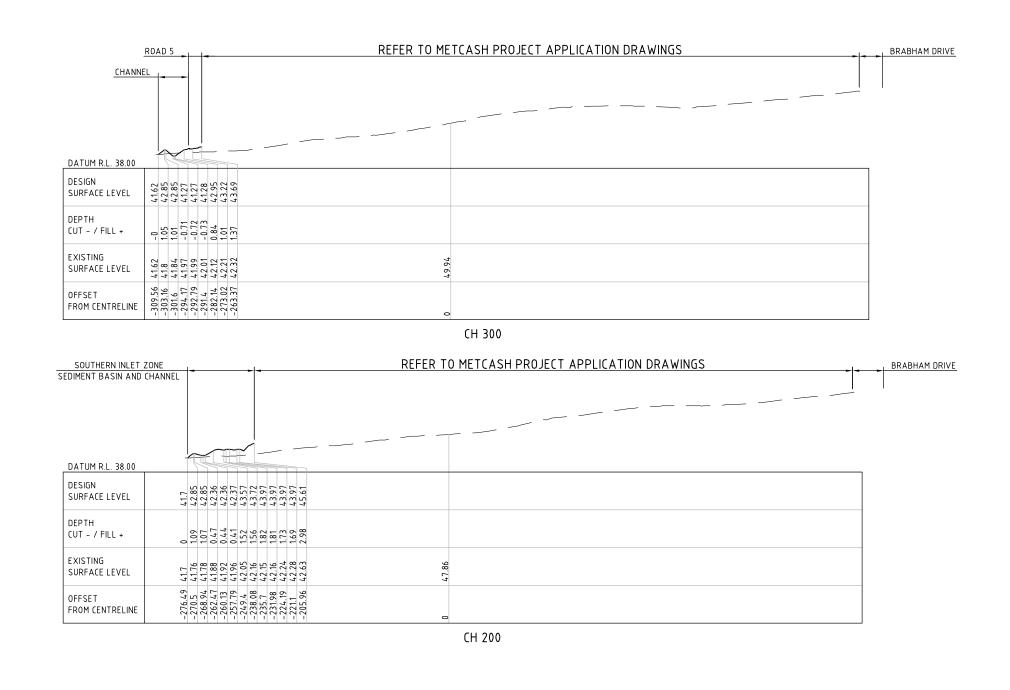
EASTERN CREEK 10m WIDE RIPARIAN BUFFER

EXISTING CONTOUR → PROPOSED CONTOUR

METCASH DEVELOPMENT

BOUNDARY







CH 100

EXISTING SURFACE

PROPOSED DESIGN SURFACE

NOTES:

1. REFER TO DRAWING 21–18115–DA101 FOR LOCATION OF SITE CROSS SECTIONS ALIGNMENT 'A'.

PRELIMINARY

В	CONCEPT DESIGN REVISED TO REFERENCE METCASH APPLICATION	SA	CM*	CM*	15.09.10
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No	Revision Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Checked	Approved	Date

0 5 10 15 20 25 m SCALE 1:500 AT ORIGINAL SIZE (VERTICAL)

0 20 40 60 80 100 m

SCALE 1:2000 AT ORIGINAL SIZE (HORIZONTAL)



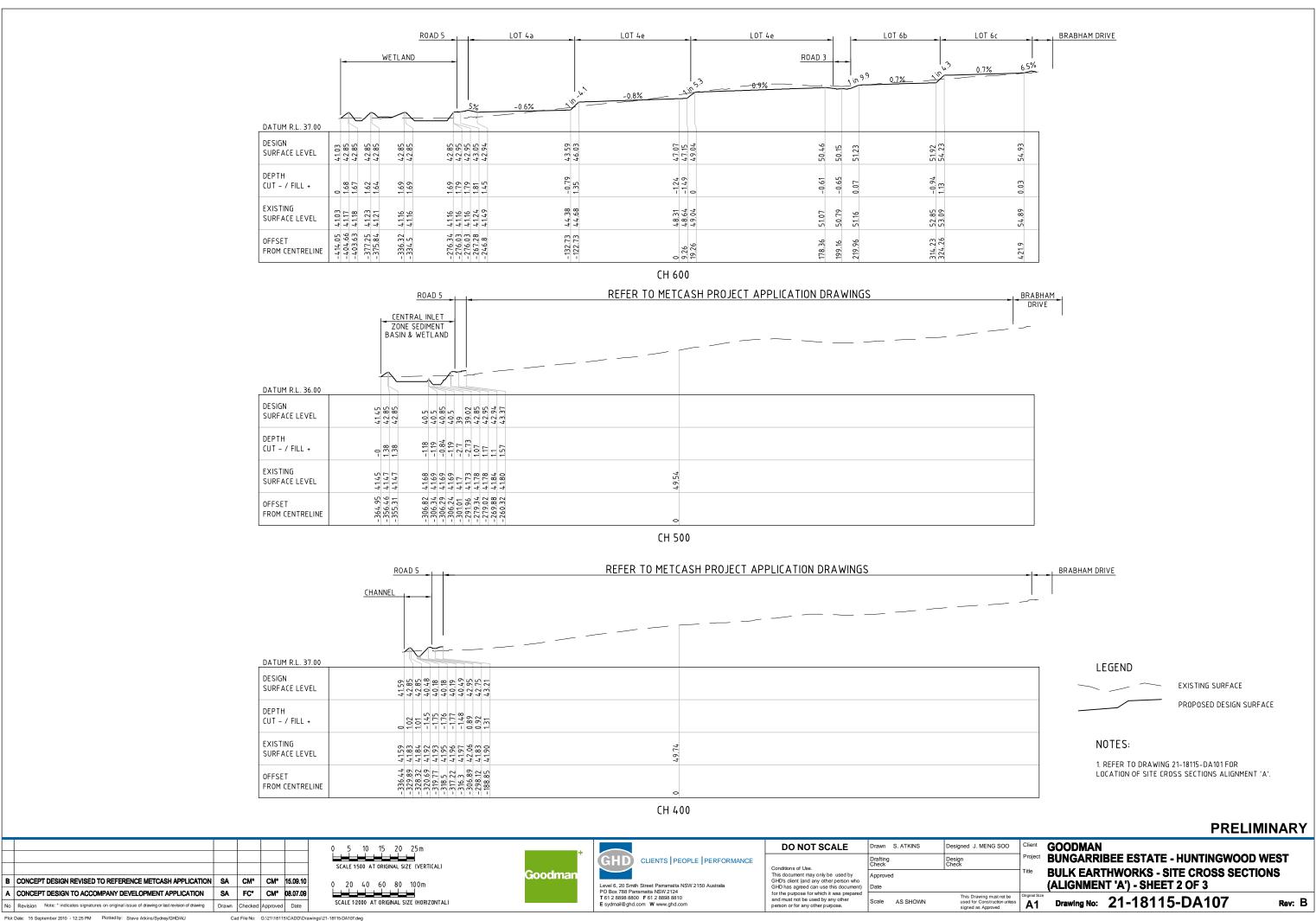
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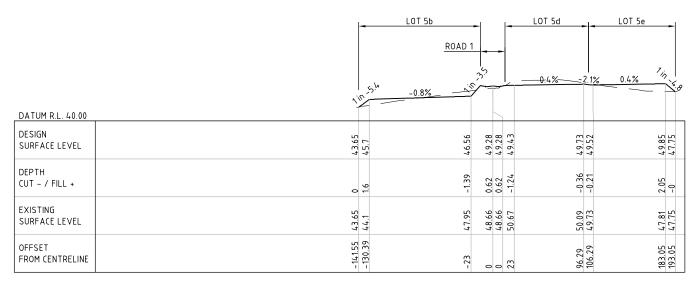
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GOODMAN BUNGARRIBEE ESTATE - HUNTINGWOOD WEST BULK EARTHWORKS - SITE CROSS SECTIONS (ALIGNMENT 'A') - SHEET 1 OF 3

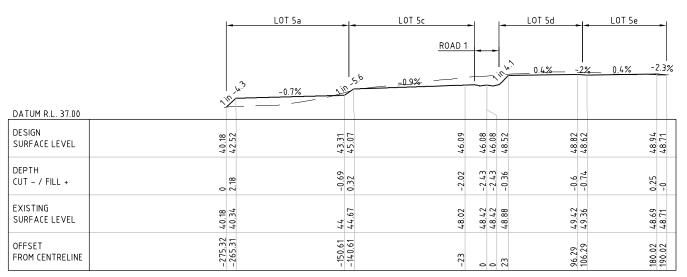
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Rev: B

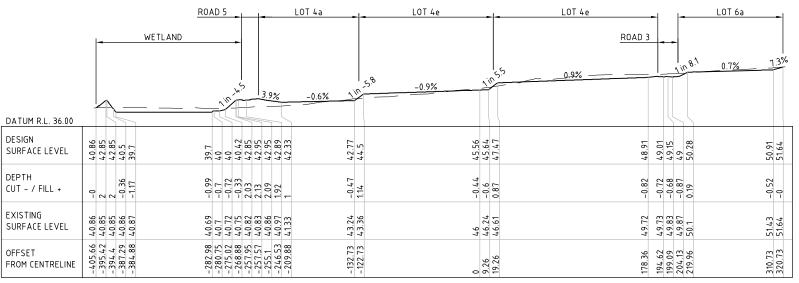




CH 900



CH 800



CH 700

PRELIMINARY

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Α	CONCEPT DESIGN TO ACCOMPANY DEVELOPMENT APPLICATION	SA	FC*	CM*	08.07.09
No	Revision Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Checked	Approved	Date

0 5 10 15 20 25 m SCALE 1:500 AT ORIGINAL SIZE (VERTICAL) 20 40 60 80 100m SCALE 1:2000 AT ORIGINAL SIZE (HORIZONTAL)



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GOODMAN

EXISTING SURFACE

PROPOSED DESIGN SURFACE

BUNGARRIBEE ESTATE - HUNTINGWOOD WEST BULK EARTHWORKS - SITE CROSS SECTIONS (ALIGNMENT 'A') - SHEET 3 OF 3

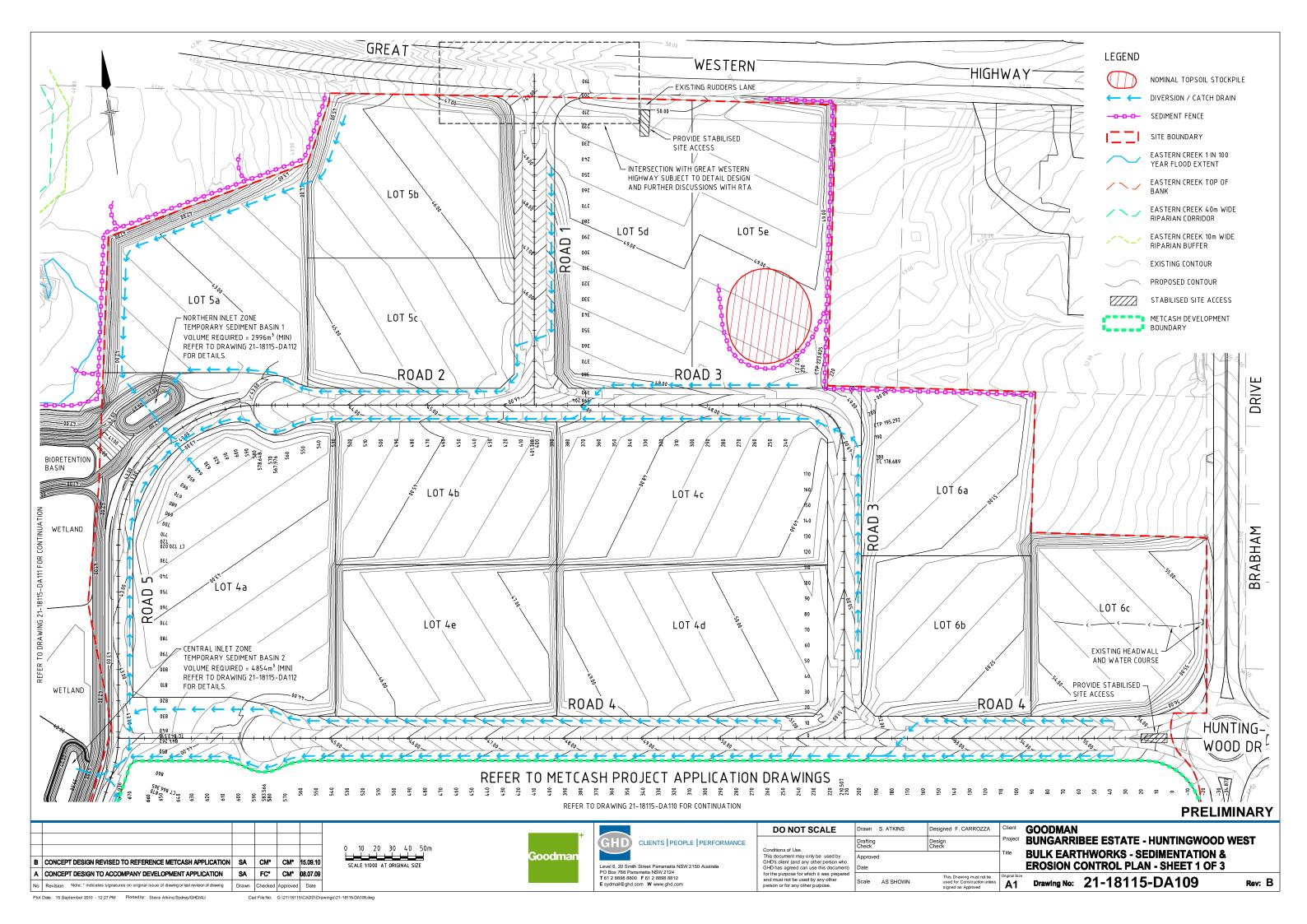
1. REFER TO DRAWING 21-18115-DA101 FOR

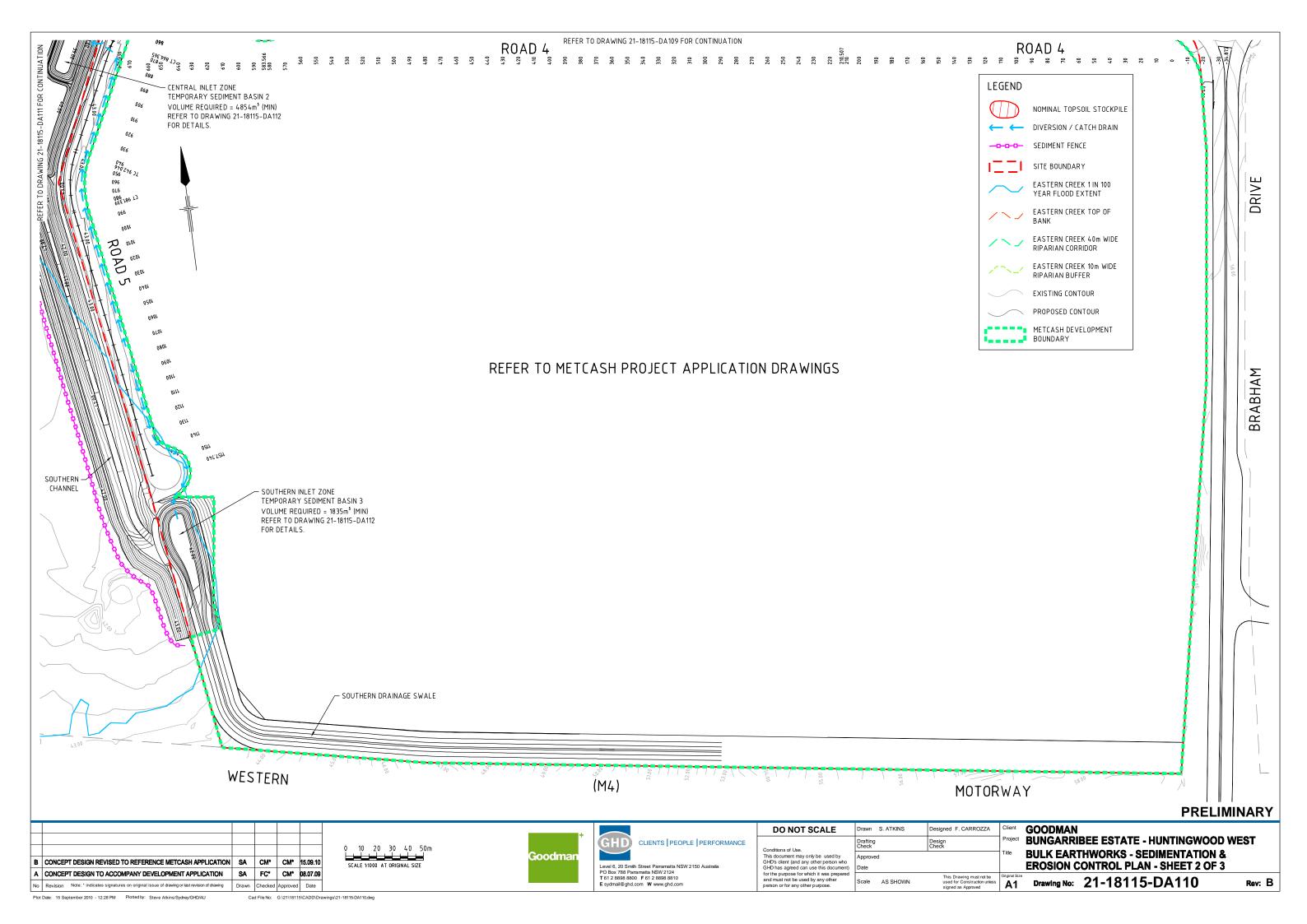
LOCATION OF SITE CROSS SECTIONS ALIGNMENT 'A'.

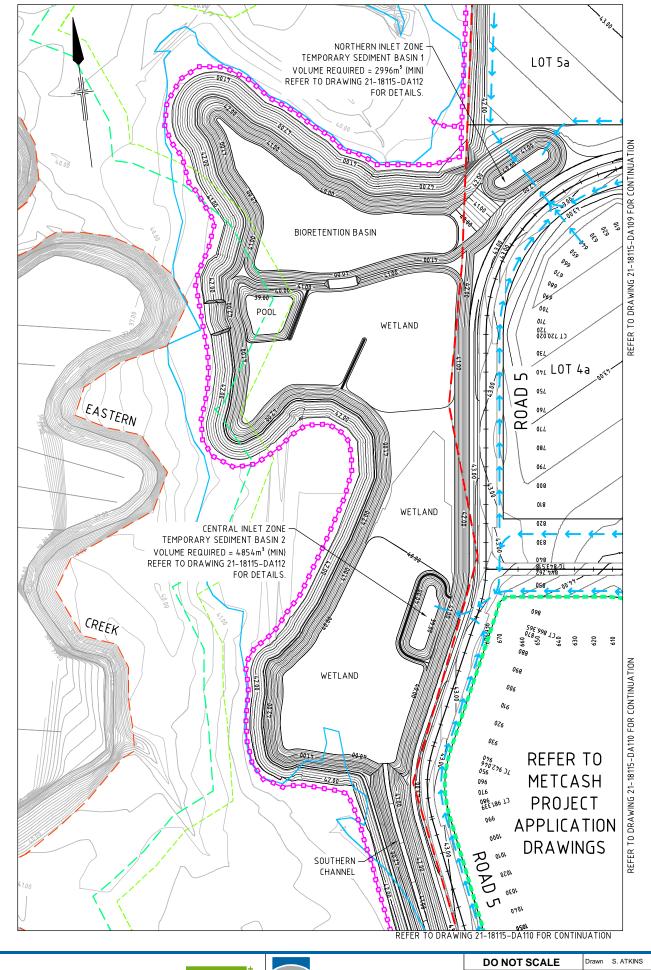
Drawing No: 21-18115-DA108

LEGEND

NOTES:







NOMINAL TOPSOIL STOCKPILE

DIVERSION / CATCH DRAIN

SEDIMENT FENCE

SITE BOUNDARY

EASTERN CREEK 1 IN 100
YEAR FLOOD EXTENT

EASTERN CREEK TOP OF
BANK

EASTERN CREEK 40m WIDE
RIPARIAN CORRIDOR

EASTERN CREEK 10m WIDE
RIPARIAN BUFFER

EXISTING CONTOUR

PROPOSED CONTOUR

METCASH DEVELOPMENT
BOUNDARY

LEGEND

PRELIMINARY

B CONCEPT DESIGN REVISED TO REFERENCE METCASH APPLICATION SA CM° CM° 15.09.10

A CONCEPT DESIGN TO ACCOMPANY DEVELOPMENT APPLICATION SA FC° CM° 08.07.08

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0 10 20 30 40 50m SCALE 1:1000 AT ORIGINAL SIZE

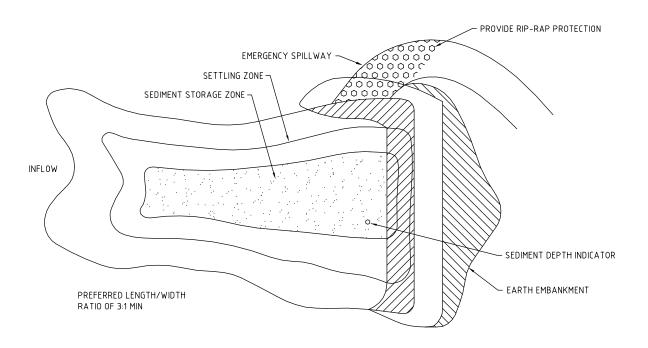


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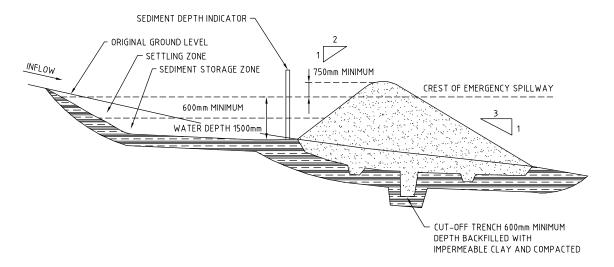
GOODMAN
BUNGARRIBEE ESTATE - HUNTINGWOOD WEST
BULK EARTHWORKS - SEDIMENTATION &
EROSION CONTROL PLAN - SHEET 3 OF 3



TYPICAL TEMPORARY SEDIMENT BASIN (PLAN)

NOT TO SCALE

CONTRACTOR TO UTILISE THE ULTIMATE BASIN / INLET ZONE FORMATIONS AS PER THE PROPOSED BULK EARTHWORKS DESIGN (REFER TO DRAWINGS 21-18115-DA102 TO DA104) AS MUCH AS POSSIBLE FOR THE CONSTRUCTION OF THE TEMPORARY SEDIMENT BASINS



TYPICAL TEMPORARY SEDIMENT BASIN (SECTION)

NOT TO SCALE

EROSION & SEDIMENTATION CONTROL NOTES

- 1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SOIL AND WATER MANAGEMENT PLAN.
- 2. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE IN ACCORDANCE WITH THE DEPARTMENT OF HOUSING MANAGING URBAN STORMWATER EDITION 2004 AND FAIRFIELD CITY COUNCIL SPECIFICATIONS. WHERE DISCREPANCY OCCURS BETWEEN THESE TWO, COUNCIL DCP12 WILL TAKE
- 3. WORKS SHALL BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
 - 1 INSTALL ALL SILT FENCING.
 - 2 CONSTRUCT BASIN.
 - 2 CONSTRUCT CATCH DRAINS, DIVERSION DRAINS AND STRAW BALES.
 - 3 INSTALL OTHER EROSION AND SEDIMENT CONTROLS.
 - 4 STRIP AND STOCKPILE TOPSOIL AND CARRY OUT BULK EARTHWORKS
 - 5 TOPSOIL AND REHABILITATE BULK EARTHWORK AREAS IMMEDIATELY UPON COMPLETION.
 - 6 UNDERTAKE REMAINING SITE WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS.
- 7 REHABILITATE THE REMAINING SITE
- 8 REMOVE SOIL AND WATER MANAGEMENT WORKS ONCE UPSTREAM SURFACES ARE STABILISED TO THE SATISFACTION OF THE SUPERINTENDENT AND COUNCIL
- 4. THIS ORDER MAY BE CHANGED SUBJECT TO FIELD CONDITIONS BUT ANY SUCH CHANGE MUST ACHIEVE ALL ENVIRONMENTAL AND CONSTRUCTION GOALS.
- 5. CONTROLS AFFECTED BY WORKS ARE TO BE RE-ESTABLISHED PRIOR TO THE COMPLETION OF EACH DAYS WORK.
- 6. THE CONTRACTOR SHALL PROVIDE SHAKER GRIDS AT ALL SITE ACCESS / EGRESS POINTS.
- 7. STRIP TOPSOIL OVER THE SITE TO AN AVERAGE DEPTH OF 150mm UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT. TOP SOIL STOCKPILES SHALL NOT EXCEED 2m IN HEIGHT AND BATTER SLOPES TO BE 3H:1V MAXIMUM
- 8. THE CONTRACTOR IS TO STABILISE TOPSOIL STOCKPILES AND ALL DISTURBED AREAS AS SOON AS THEY REACH FINAL LEVELS. STABILISATION TO BE BY HYDROSEEDING OR OTHER METHOD APPROVED BY SUPERINTENDENT AND COUNCIL ENGINEER. ALL SEEDED AREAS TO BE WATERED TWICE WEEKLY UNTIL GRASS IS ESTABLISHED OR COVERED WITH BITUMEN HAY MULCH. A RECOMMENDED LIST OF PLANT SPECIES FOR TEMPORARY COVER IS:
- JAPANESE MILLET 25kg/ha (SPRING)
- OATS (RYECORN) 25kg/ha (SUMMER)
- JAPANESE MILLET 10kg/ha (AUTUMN)
- OATS (RYECORN) 30kg/ha (WINTER)

GYPSUM AND MULTIGROW/ ENRICH FERTILISER AT RATES TO BE DETERMINED BY SUBSOIL AND TOPSOIL TESTING

PERMANENT GRASSING TO BE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

- 9. WHERE SURFACE SLOPES ARE STEEPER THAN 6H:1V BITUMEN STRAW MULCH SHALL BE APPLIED AFTER SEEDING AT THE FOLLOWING RATES, OR AS DIRECTED.
- BITUMEN EMULSION 0.25 L/m² (50% WATER, 50% SLOW BREAKING ANIONIC EMULSION MIX).
- 10 TOPSON SHALL BE RESPREAD AND STABILISED AS SOON AS POSSIBLE DISTURBED AREAS SHALL BE LEFT WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST KEYING IN
- 11. DUST CONTROL MEASURES SHALL BE IMPLEMENTED CONTINUOUSLY DURING CONSTRUCTION WORKS TO THE SATISFACTION OF THE SUPERINTENDENT AND COUNCIL
- 12. THE CONTRACTOR SHALL TEMPORARILY REHABILITATE ANY DISTURBED AREAS WITHIN 20 DAYS. WHERE FINAL SHAPING HAS OCCURRED THE CONTRACTOR SHALL PROVIDE FINAL REHABILITATION
- 13. DURING EARTHWORKS, TEMPORARY DIVERSION BANKS SHOULD BE CONSTRUCTED TO LIMIT SLOPE LENGTH, WHERE POSSIBLE, IN ACCORDANCE WITH THE FOLLOWING

RECOMMENDED MAXIMUM SPACING BETWEEN CROSS BANKS ON ALL ROADS

SLOPE MAXIMUM SPACING (m) 0 TO 1% 1 TO 3% 100 3 TO 5% 70 5 TO 10% 50 10 TO 17%

- 14. ALL STORMWATER PITS TO BE COVERED OR DROP INLET SEDIMENT TRAPS SHALL BE PROVIDED. KERB INLET TRAPS ARE TO BE INSTALLED AFTER COMPLETION OF PAVING.
- 15. TEMPORARY KERB INLET SEDIMENT TRAPS TO BE PROVIDED TO ALL EXISTING KERB INLETS IN THE VICINITY OF THE WORKS DURING CONSTRUCTION.

- 16. SEDIMENT TRAPS AND BASINS ARE TO BE MAINTAINED SUCH THAT:
- (A) SEDIMENT IS REMOVED SUCH THAT NO LESS THAN 70% OF THE DESIGN CAPACITY REMAINS AT ANY ONE TIME
- (B) MATERIALS ARE REPLACED OR REPAIRED AS REQUIRED TO ENSURE SERVICEABILITY OF BOTH THE ELEMENT AND THE TRAP OR BASIN.
- 17. PERMANENT DRAINAGE STRUCTURES INCLUDING: PIPES, PITS ARE TO BE HANDED OVER IN A CLEAN CONDITION AT THE COMPLETION OF THE CONTRACT MAINTENANCE PERIOD.
- 18. FOLLOWING COMPLETION AND RESTORATION OF SITE: REMOVE ALL MATERIALS AND FILL DIVERSION DRAINS, WATERWAYS, SEDIMENT TRAPS, AND SEDIMENT BASINS AND COMPACT IN ACCORDANCE WITH THE SPECIFICATION TO MATCH FINAL LEVELS OF THE WORKS. PROVIDE 100mm TOPSOIL AND
- 19. ACCESS POINT TO ALLOW MACHINE ENTRY / EXIT ARE TO INCLUDE A ROUNDED DIVERSION BANK 0.3m HIGH WITH 10H:1V BATTERS TO DIVERT RUNOFF TO SEDIMENT FENCES EITHER SIDE OF ENTRY.
- 20. WHERE FLOCCULATION OF BASINS IS REQUIRED UNLESS OTHERWISE SPECIFIED THE RECOMMENDED INITIAL DOSING IS 0.32KG OF GYPSUM PER CUBIC METRES OF BASIN VOLUME. THE CONTRACTOR MAY VARY THIS RATE SUBJECT TO TESTING OF PREVIOUS WATER SAMPLES AND THE ACHIEVEMENTS OF THE REQUIRED WATER QUALITY STANDARDS. FLOCCULATION TO TAKE PLACE WITHIN 48 HOURS OF AN EVENT.
- 21. THE CONTRACTOR SHALL MAINTAIN A LOG BOOK DETAILING
 - RECORDS OF ALL RAINFALL
 - CONDITION OF SOIL AND WATER MANAGEMENT STRUCTURES
 - ANY APPLICATION OF FLOCCULATING AGENTS TO SEDIMENT BASIN
 - VOLUMES OF ALL WATER DISCHARGED FROM SEDIMENT

22.

ION ACTIVITY.

OPERATIONAL POLICY FOR TEMPORARY SEDIMENT BASIN

- 1. SETTLING ZONE SHOULD BE PUMPED OUT WITHIN 5 DAYS FOLLOWING RAINFALL EVENT.
- 2. PUMPING OF SETTLED WATER SHOULD BE:
 - (a) FIRSTLY RE-USE FOR PROCESS WATER IF DEMAND EXISTS (b) SECONDLY RE-USE FOR ONSITE DUST SUPPRESSION (c) LASTLY DISPOSE TO STORMWATER IF WATER QUALITY APPROPRIATE
- 3. FLOCCULATION SHOULD BE USED WHERE EXTENDED SETTLING IS LIKELY TO FAIL
- 4. FOR CONSTRUCTION NOTES REFER TO THE DEPARTMENT OF HOUSING MANAGING URBAN STORMWATER HANDBOOK EDITION 2004 DETAIL SD6-4.
- 5. TEMPORARY SEDIMENT BASINS ARE TO BE CONSTRUCTED TO THE FOLLOWING VOLUMES:

BASIN NUM	1BER SEDIMENT STORAGE ZONE (m³)	SETTLING ZONE (m
1	1242	1754
2	2012	2842
3	761	1074

PRELIMINARY

В	CONCEPT DESIGN REVISED TO REFERENCE METCASH APPLICATION	SA	CM*	CM*	15.09.10
Α	CONCEPT DESIGN TO ACCOMPANY DEVELOPMENT APPLICATION	SA	FC*	CM*	08.07.09
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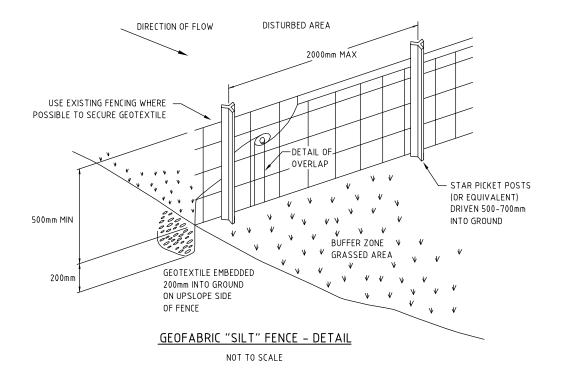


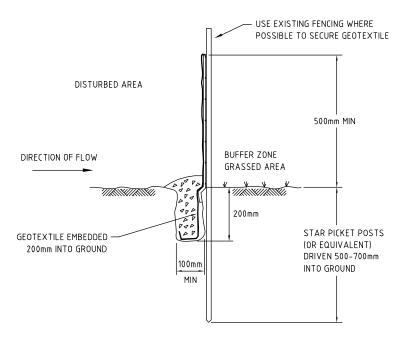
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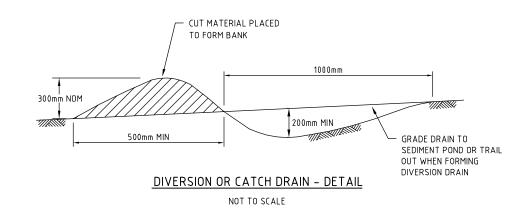
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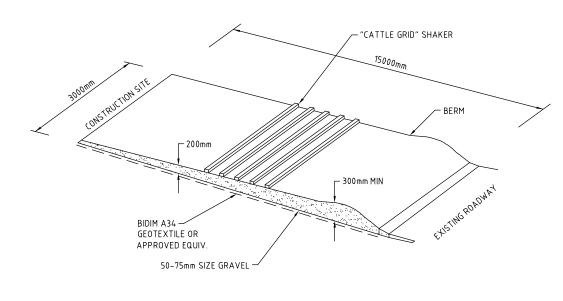




GEOFABRIC "SILT" FENCE - TYPICAL SECTION

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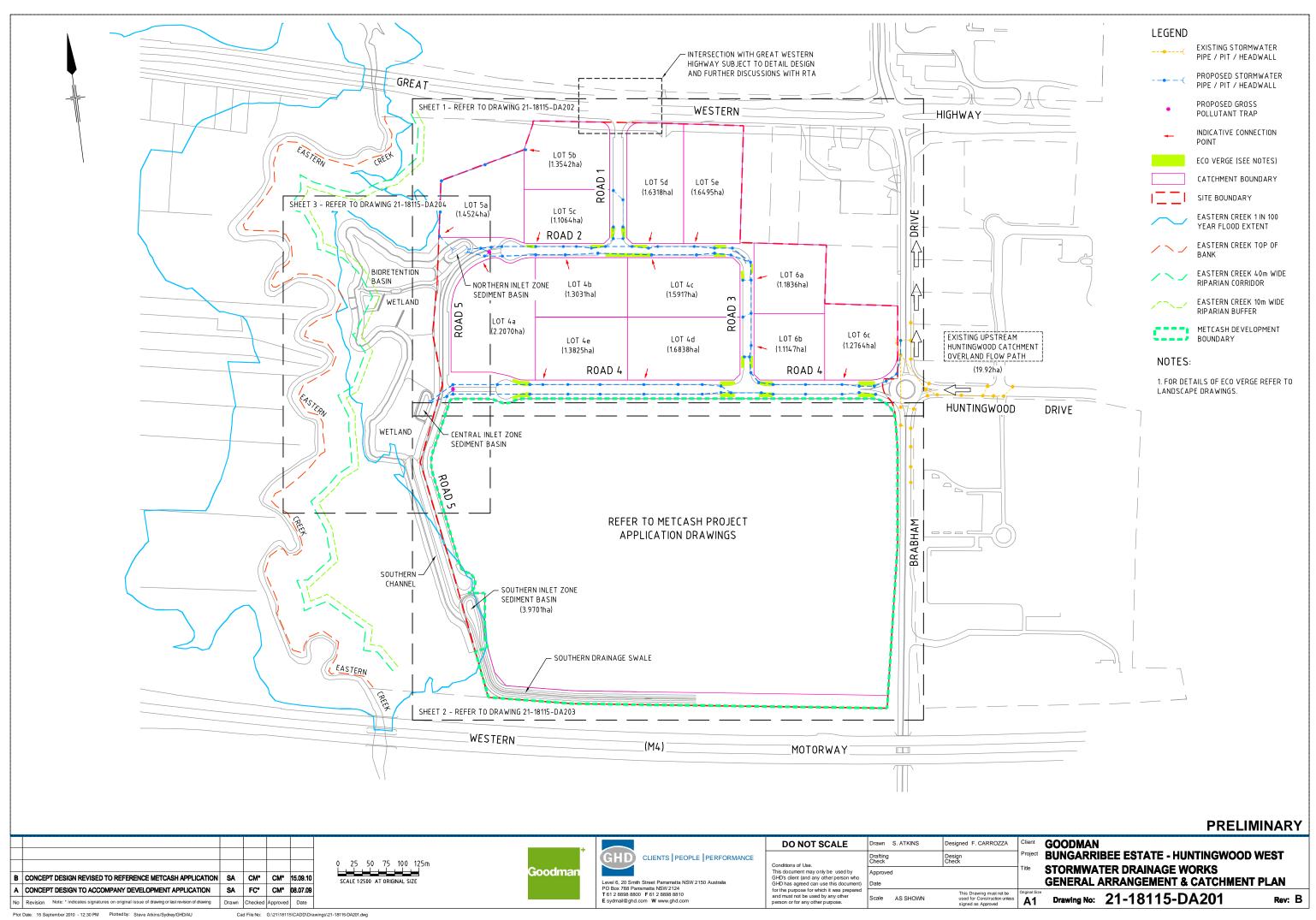
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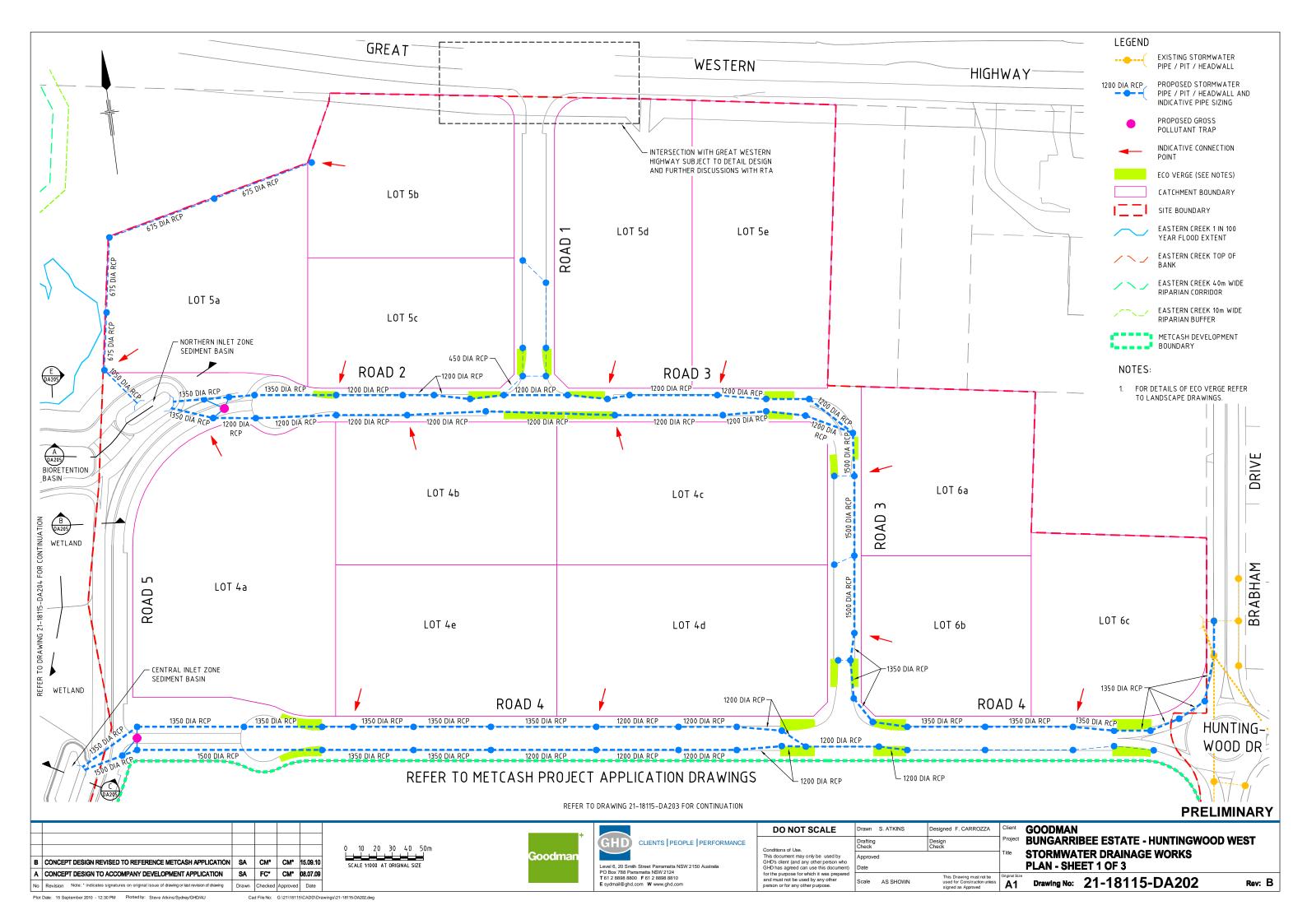
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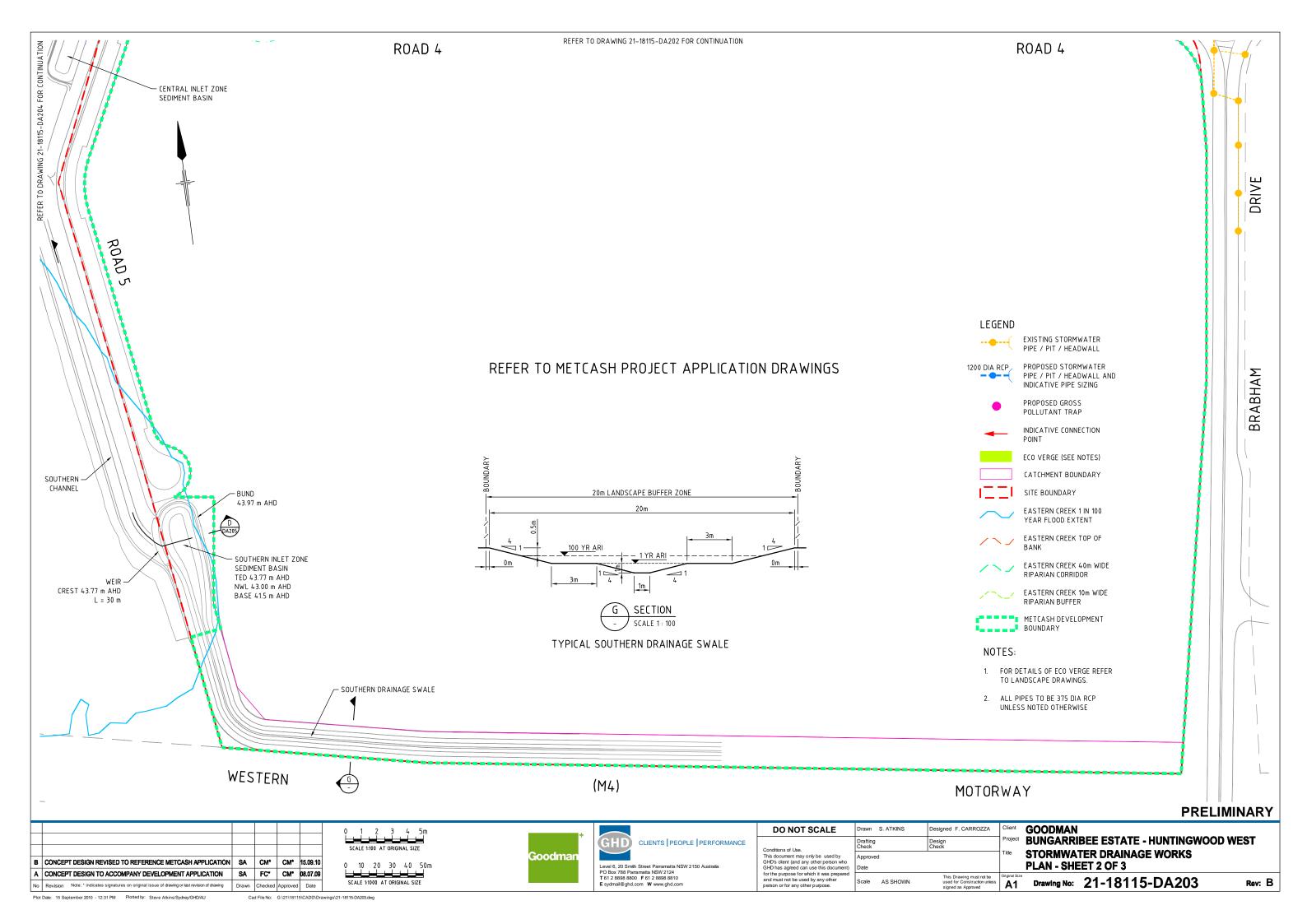
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BULK EARTHWORKS - SEDIMENTATION &
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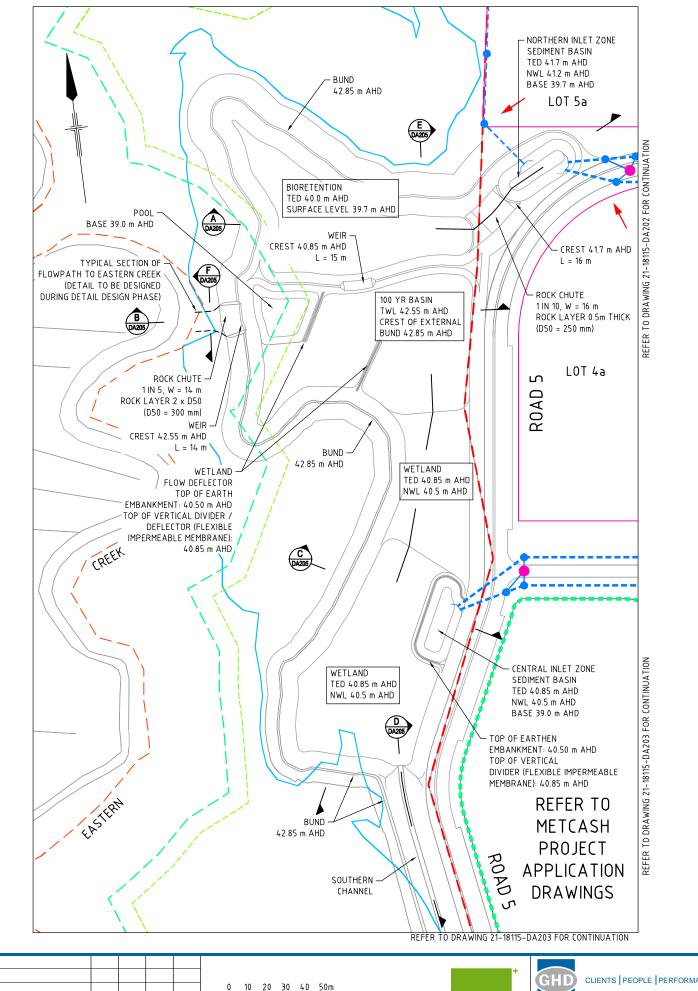
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LEGEND

EXISTING STORMWATER PIPE / PIT / HEADWALL

1200 DIA RCP

PROPOSED STORMWATER PIPE / PIT / HEADWALL AND INDICATIVE PIPE SIZING



PROPOSED GROSS POLLUTANT TRAP



INDICATIVE CONNECTION



ECO VERGE (SEE NOTES) CATCHMENT BOUNDARY



SITE BOUNDARY



EASTERN CREEK 1 IN 100 YEAR FLOOD EXTENT



EASTERN CREEK TOP OF BANK



EASTERN CREEK 40m WIDE RIPARIAN CORRIDOR



EASTERN CREEK 10m WIDE RIPARIAN BUFFER

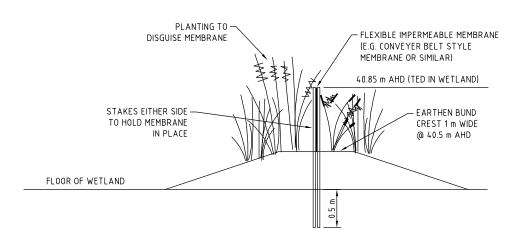


METCASH DEVELOPMENT

BOUNDARY

NOTES:

- 1. FOR DETAILS OF ECO VERGE REFER TO LANDSCAPE DRAWINGS.
- 2. ALL PIPES TO BE 375 DIA RCP UNLESS NOTED OTHERWISE.
- 3. STORMWATER DRAINAGE DETAILS PREPARED BY EDAW AND REPRODUCED



WETLAND FLOW DEFLECTOR / DIVIDER USING IMPERMEABLE MEMBRANE TYPICAL DETAIL (ALSO USED AS BUND AROUND CENTRAL SEDIMENT BASIN)

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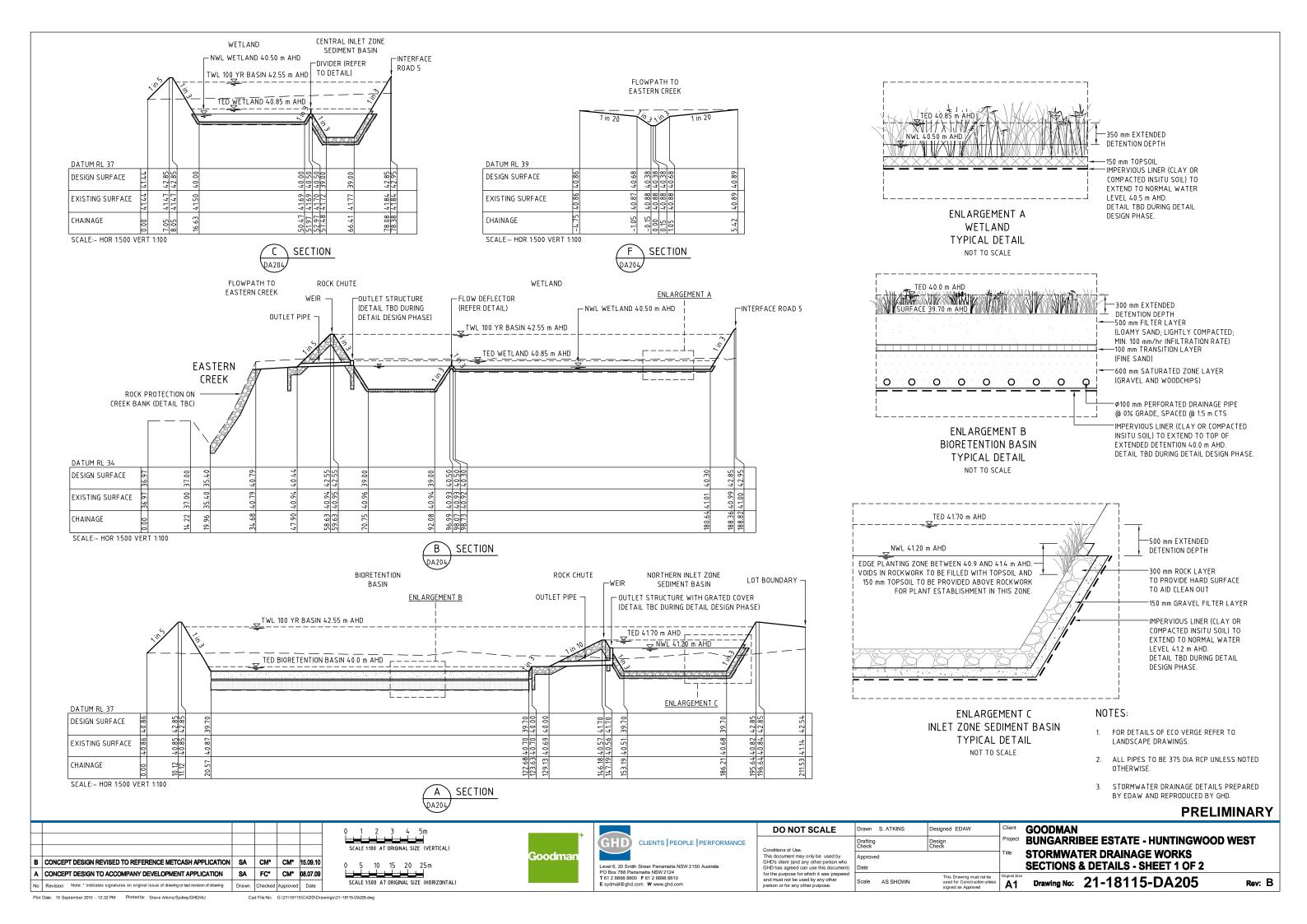
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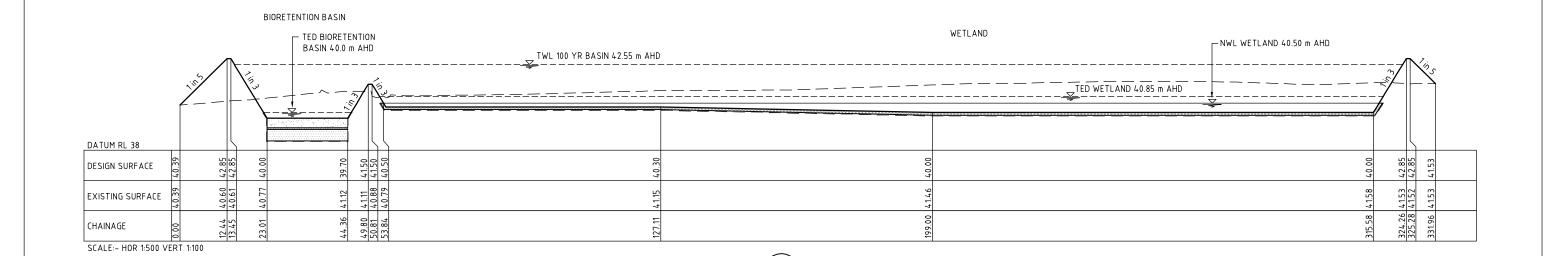
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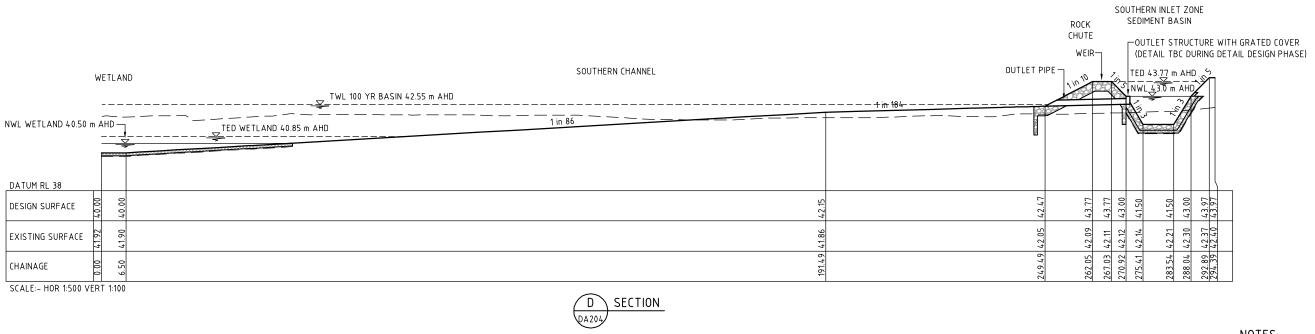
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GOODMAN BUNGARRIBEE ESTATE - HUNTINGWOOD WEST STORMWATER DRAINAGE WORKS PLAN - SHEET 3 OF 3

A1 Drawing No: 21-18115-DA204







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- 1. FOR DETAILS OF ECO VERGE REFER TO LANDSCAPE DRAWINGS.
- 2. ALL PIPES TO BE 375 DIA RCP UNLESS NOTED OTHERWISE.
- 3. STORMWATER DRAINAGE DETAILS PREPARED BY EDAW AND REPRODUCED BY GHD.

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