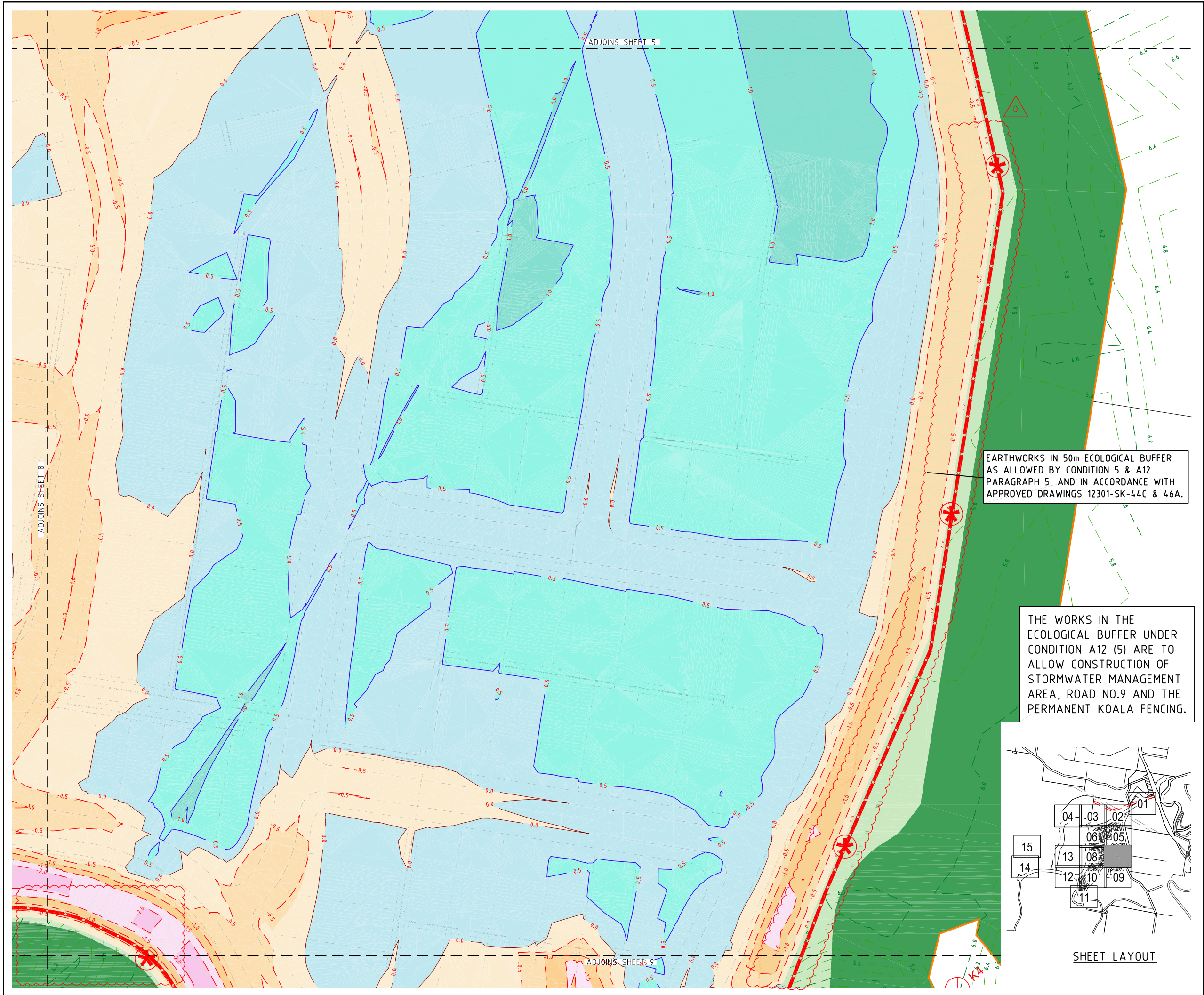




PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN
COUNTY OF ROUS

CLIENT

PROJECT 28
PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

D	02-06-20	KOALA GATE AND ESCAPE MECHANISM ADDED
C	05-03-20	NOTE ADDED
B	16-08-19	CUT AND FILL AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE DATE	AMENDMENT

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LANDSURV

GILBERT SUTHERLAND

JWA Ecological Consultants

DRAWING TITLE

BULK EARTHWORKS
CUT FILL
PLAN
SHEET 7

CONSTRUCTION ISSUE

MORTONS
urbansolutions

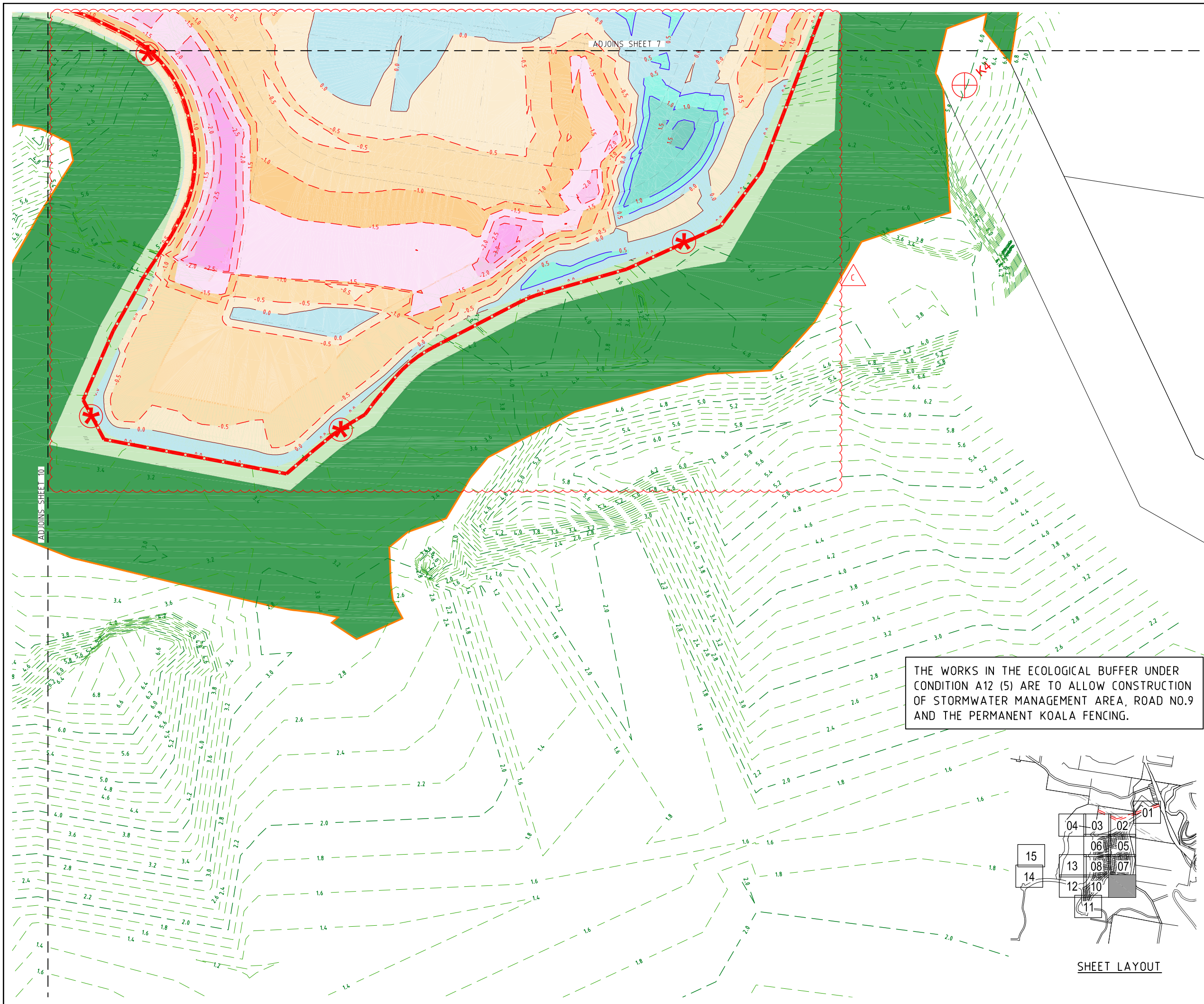
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED	NER 2953710 DATE 27-11-18
DRAWING NUMBER	AMEND.
12301-BE1-046	D

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PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28
PTY LTD

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

C	02-06-20	KOALA GATE AND ESCAPE MECHANISM ADDED
B	16-08-19	CUT AND FILL AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE DATE	AMENDMENT

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DRAWING TITLE

BULK EARTHWORKS
CUT FILL
PLAN
SHEET 9

CONSTRUCTION ISSUE

Urban & Regional Planning
Civil Engineering
Project Coordination

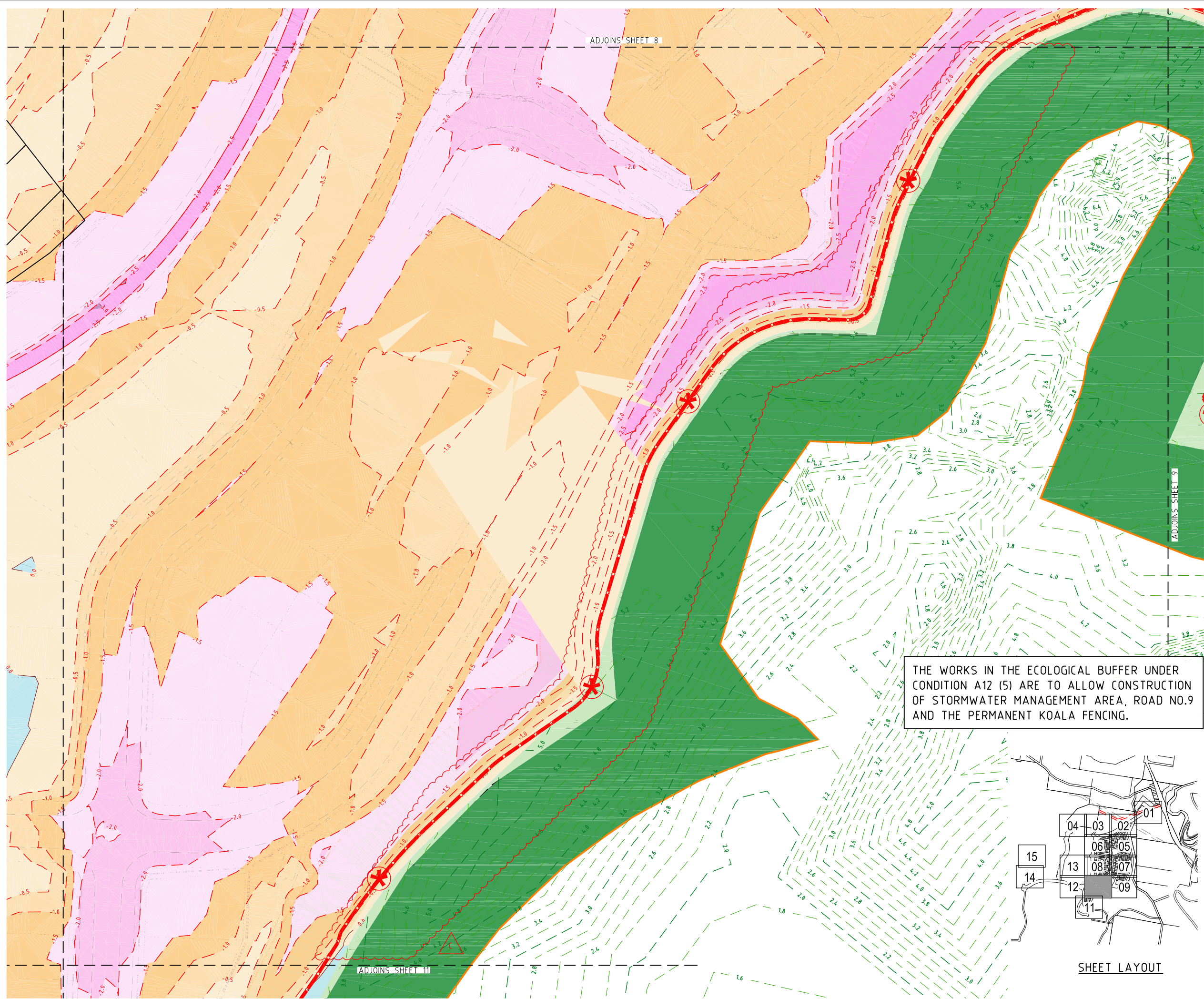
MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED	NER 2953710 DATE 27-11-18
DRAWING NUMBER	AMEND.

12301-BE1-048C



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28
PTY LTD

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

C	02-06-20	KOALA GATE AND ESCAPE MECHANISM ADDED
B	16-08-19	CUT AND FILL AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE DATE	AMENDMENT
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DRAWING TITLE

BULK EARTHWORKS
CUT FILL
PLAN
SHEET 10

CONSTRUCTION ISSUE

Urban & Regional Planning
Civil Engineering
Project Coordination

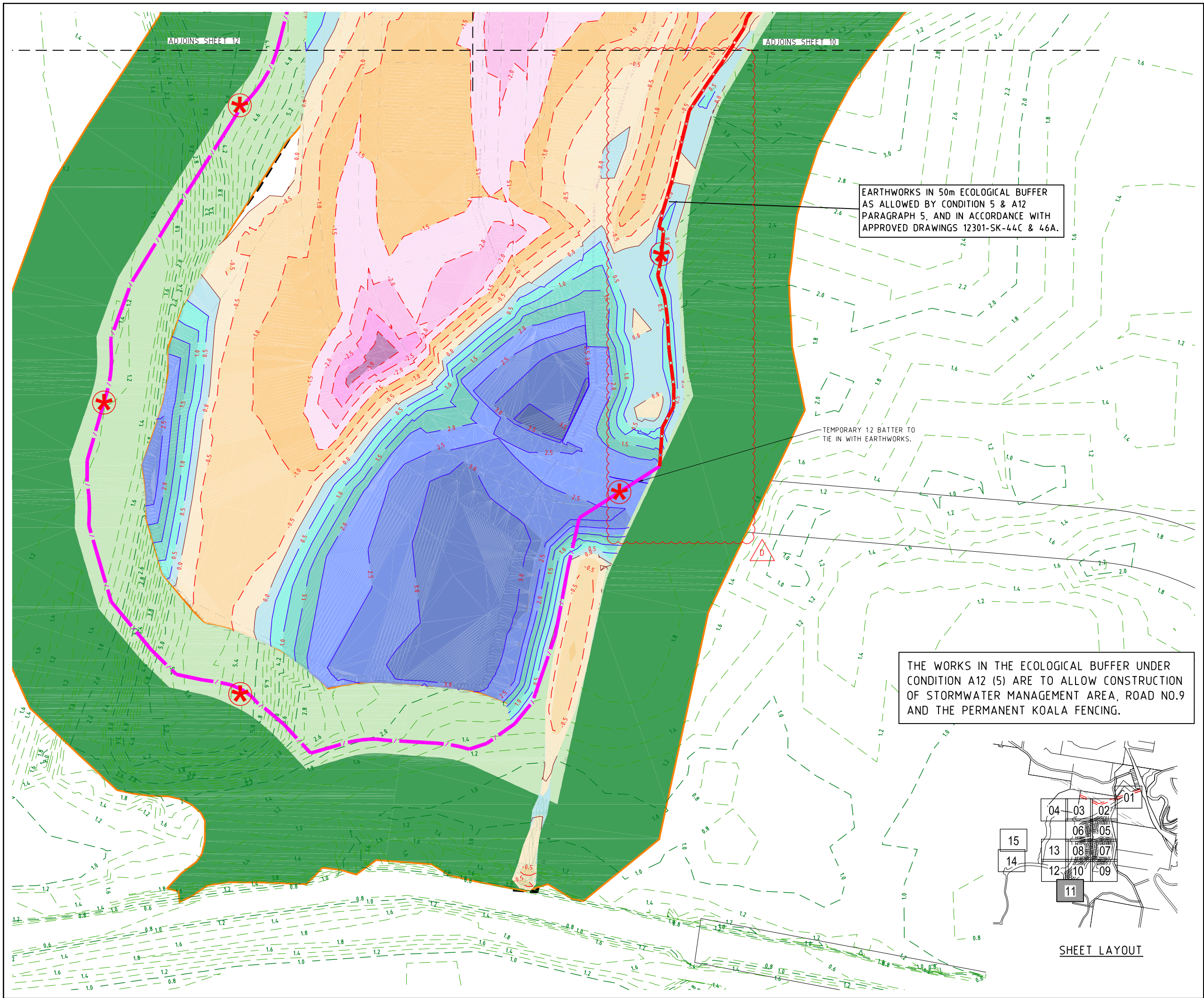
MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED	NER 2953710
DATE 27-11-18	
DRAWING NUMBER	
12301-BE1-049	
AMEND.	
C	

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PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28
PTY LTD

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES		DATE
TENDER		13-11-19
COUNCIL		XX-XX-XX
CONSTRUCTION		XX-XX-XX

D	02-06-20	KOALA GATE AND ESCAPE MECHANISM ADDED
C	30-03-20	NOTE AND LIMIT OF WORK AMENDED
B	16-08-19	CUT AND FILL AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE	DATE	AMENDMENT

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BULK EARTHWORKS
CUT FILL
PLAN
SHEET 11

CONSTRUCTION ISSUE

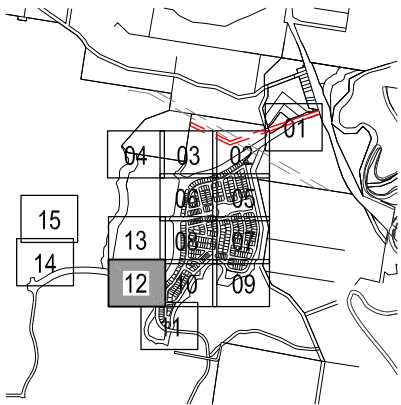
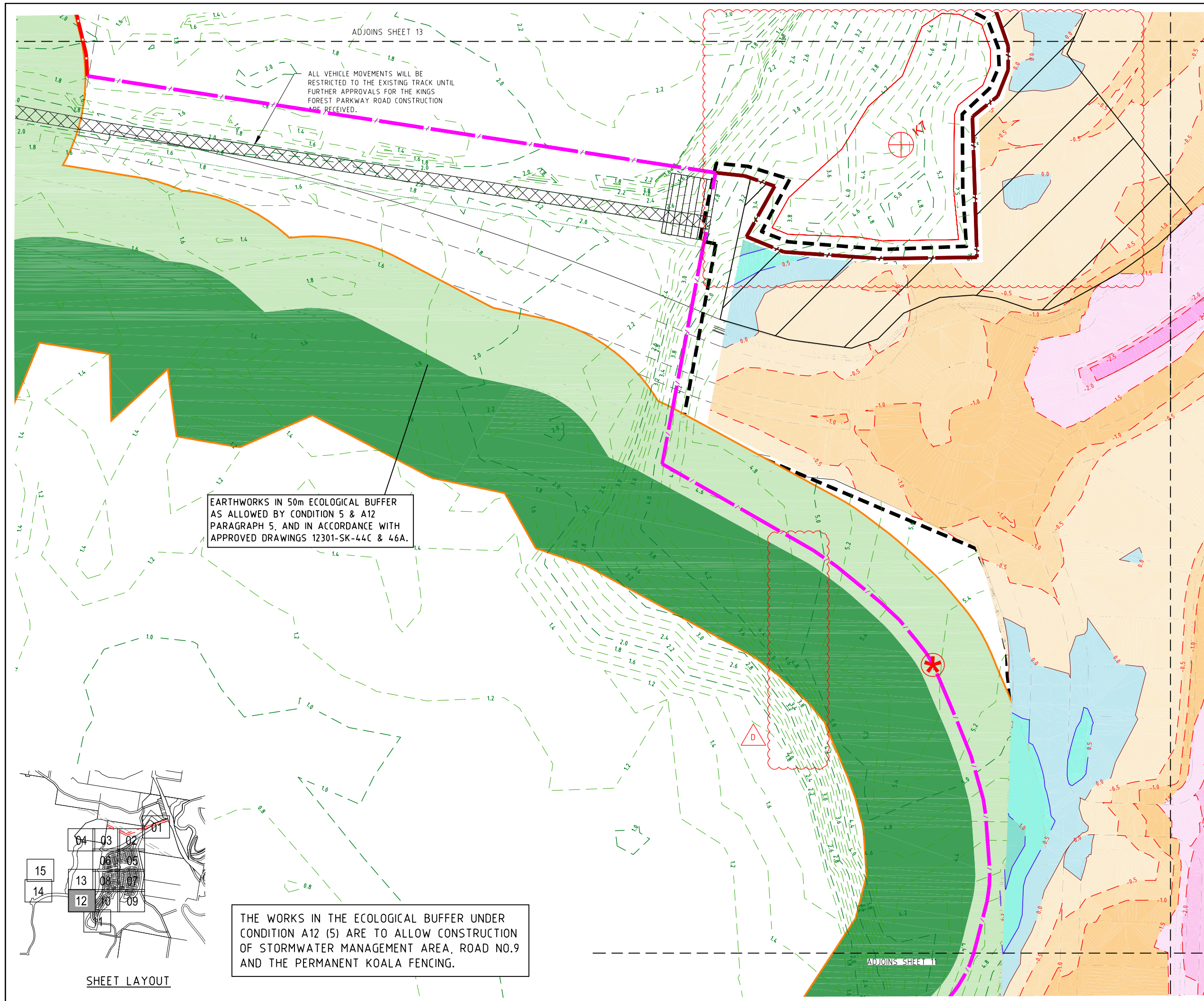
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel: 07 5571 1099
Fax: 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED		NER 2953710	DATE 27-11-18
DRAWING NUMBER			AMEND.
12301-BE1-050			D



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701

PARISH OF CUDGEN .

COUNTY OF ROUS .

CLIENT

PROJECT 28

PTY LTD

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

D	02-06-20	KOALA GATE AND ESCAPE MECHANISM ADDED
C	30-03-20	NOTE AND LIMIT OF WORKS AMENDED
B	16-08-19	CUT AND FILL AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE DATE	AMENDMENT
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BULK EARTHWORKS
CUT FILL
PLAN
SHEET 12

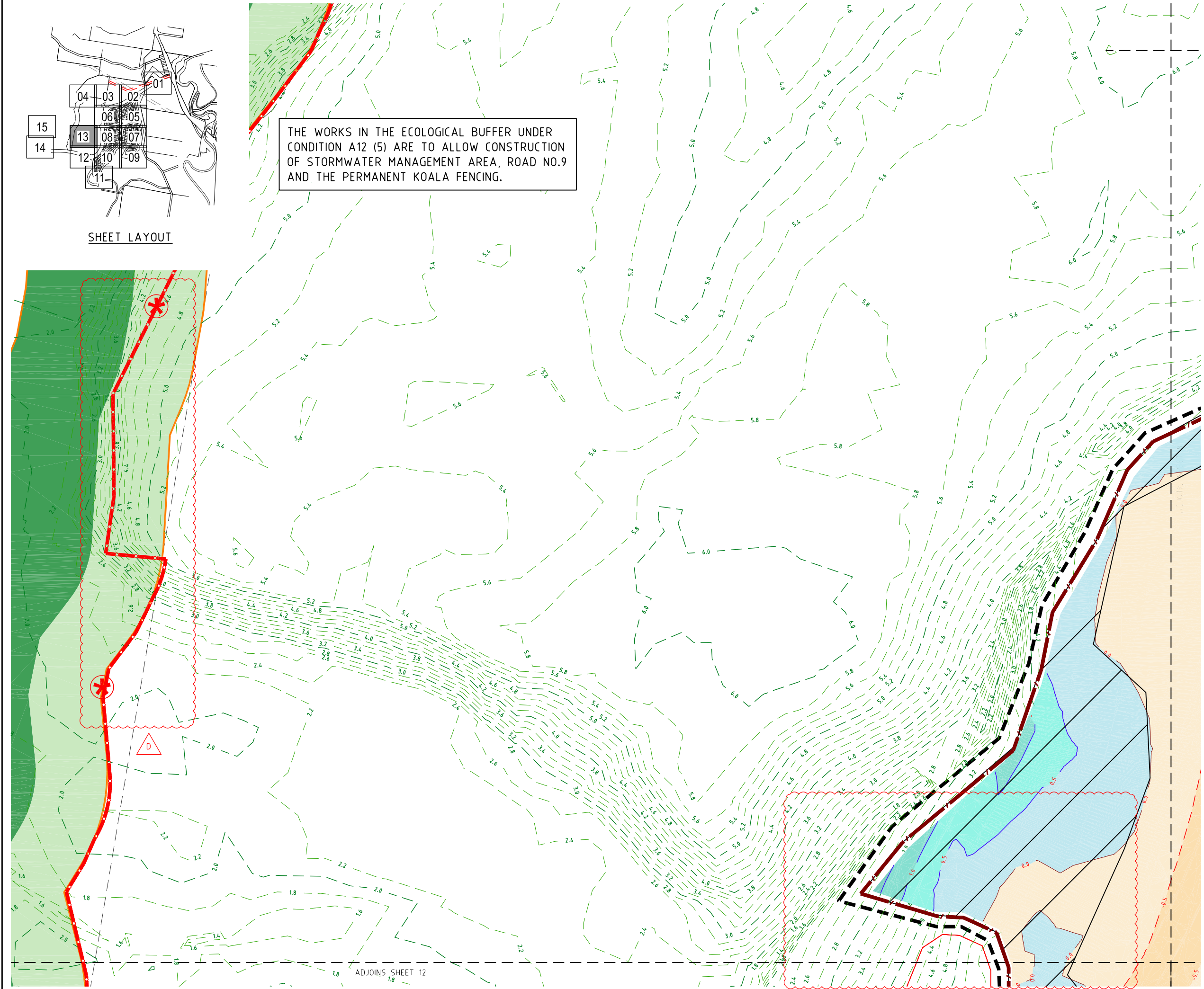
CONSTRUCTION ISSUE

Urban & Regional Planning
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Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED		NER 2953710	DATE 27-11-18
DRAWING NUMBER			AMEND.
12301-BE1-051			D



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

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PROJECT 28
PTY LTD

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

D	02-06-20	KOALA GATE AND ESCAPE MECHANISM ADDED
C	30-03-20	LIMIT OF WORKS AMENDED
B	16-08-19	SPOIL AREA AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE DATE	AMENDMENT

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BULK EARTHWORKS
CUT FILL
PLAN
SHEET 13

CONSTRUCTION ISSUE

Urban & Regional Planning
Civil Engineering
Project Coordination

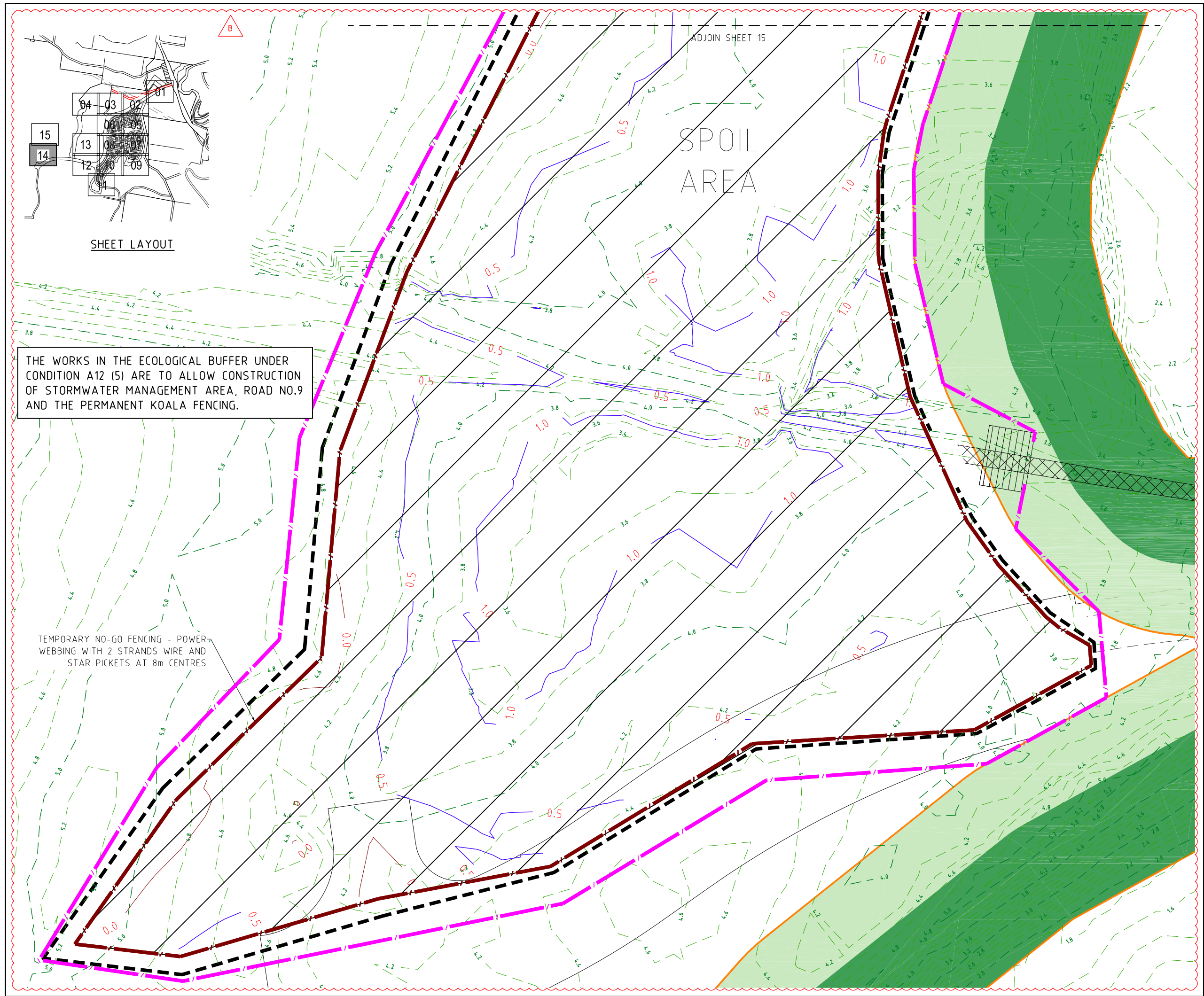
MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED		NER 2953710	DATE 27-11-18

DRAWING NUMBER	AMEND.
12301-BE1-052	D



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28
PTY LTD

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

B	30-03-20	LIMIT OF WORKS AMENDED
A	09-10-19	PRIVATE CERTIFIER
PRE DATE	AMENDMENT	

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DRAWING TITLE

BULK EARTHWORKS
CUT FILL
PLAN
SHEET 14

CONSTRUCTION ISSUE

Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

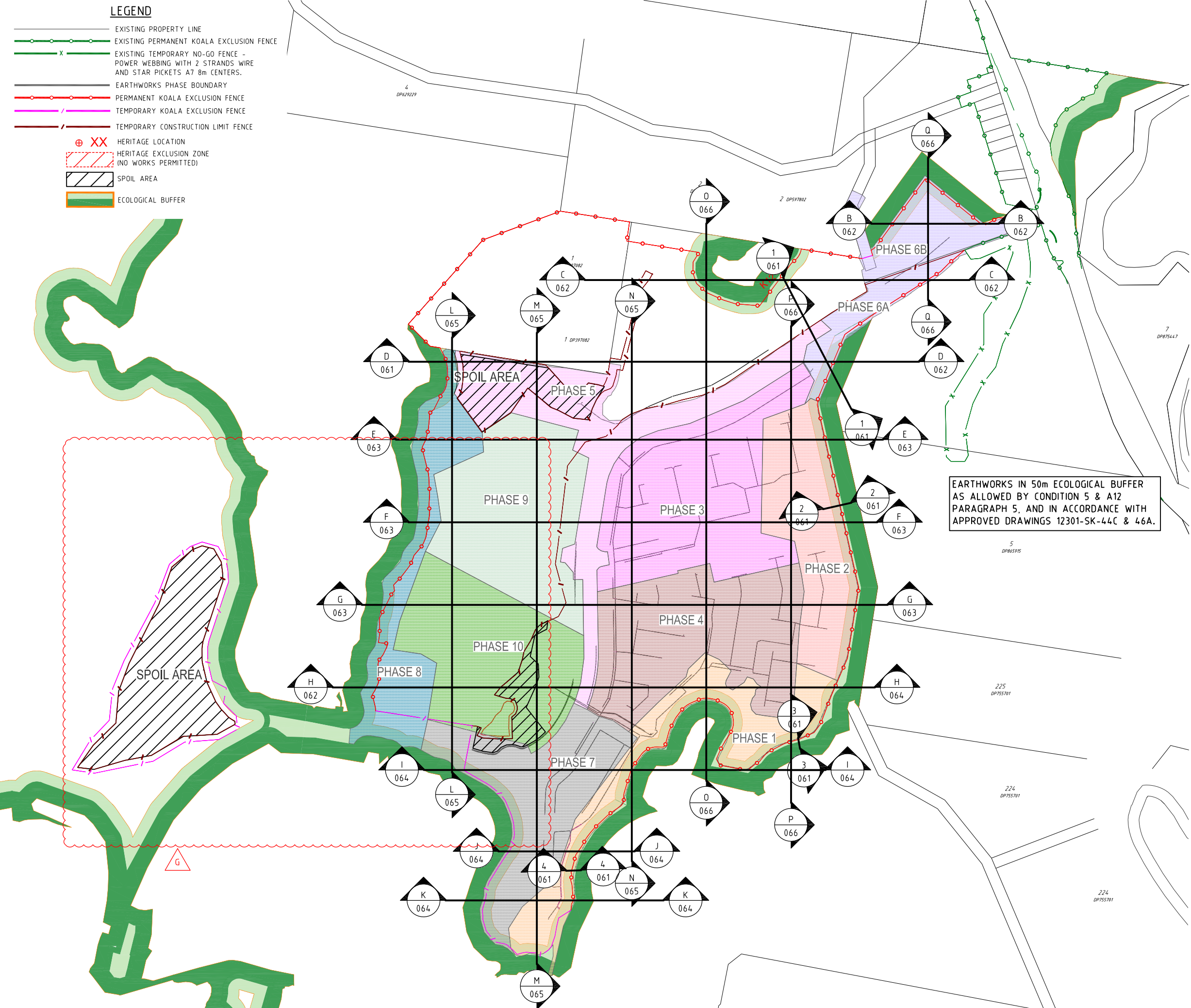
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APPROVED	NER 2953710 DATE 27-11-18
DRAWING NUMBER	
13201-BE1-053	AMEND. B

LEGEND

- EXISTING PROPERTY LINE
- EXISTING PERMANENT KOALA EXCLUSION FENCE
- EXISTING TEMPORARY NO-GO FENCE - POWER WEBBING WITH 2 STRANDS WIRE AND STAR PICKETS A7 8m CENTERS.
- EARTHWORKS PHASE BOUNDARY
- PERMANENT KOALA EXCLUSION FENCE
- TEMPORARY KOALA EXCLUSION FENCE
- TEMPORARY CONSTRUCTION LIMIT FENCE
- ⊕ XX HERITAGE LOCATION
- HERITAGE EXCLUSION ZONE (NO WORKS PERMITTED)
- SPOIL AREA
- ECOLOGICAL BUFFER



PROJECT NAME
KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD



Scale: NTS

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

G	12-08-20	FENCE ALIGNMENT AMENDED
F	03-06-20	SECTIONS AMENDED
E	05-03-20	LIMIT AND NOTE AMENDED
D	21-01-20	SPOIL AREA AND LEGEND ADDED
C	19-09-19	SPOIL AREA AMENDED
B	16-08-19	SECTIONS, SPOIL AREA AND LEGEND AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE DATE	AMENDMENT
----------	-----------

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DRAWING TITLE

BULK EARTHWORKS
SECTIONS KEYPLAN
AND DETAILS

CONSTRUCTION ISSUE



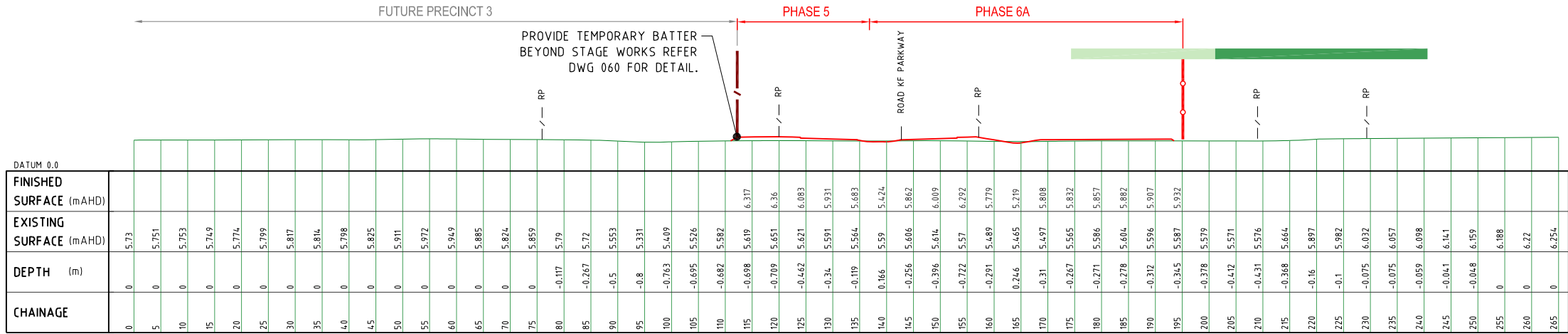
MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel: 07 5571 1099
Fax: 07 5571 1088

Postal Address:
PO Box 2484
Southport QLD 4215

Gold Coast Office:
Suite 9, 19 Short St
Southport QLD 4215

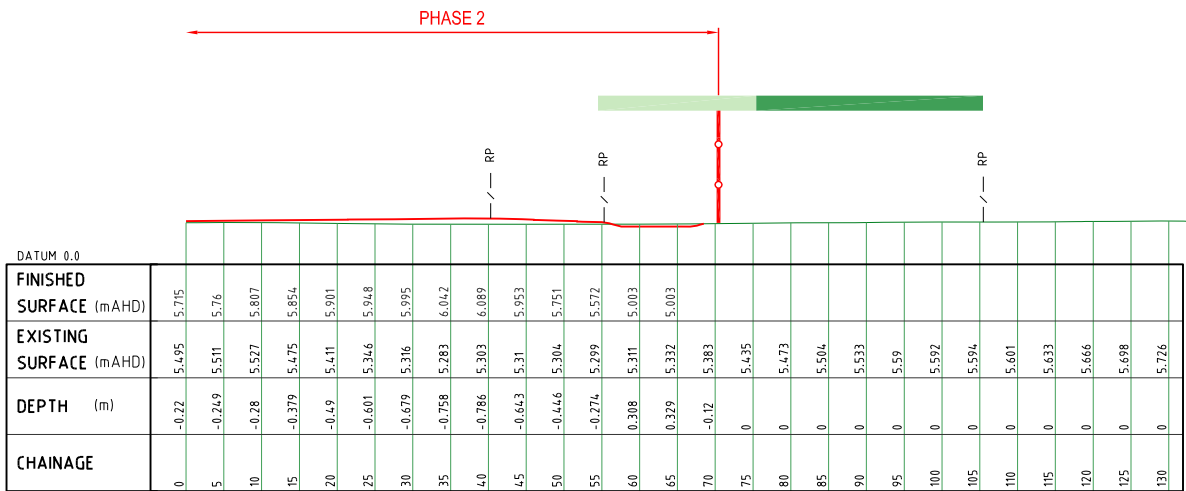
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APPROVED [Signature]	NER 2953710 DATE 26-04-17

DRAWING NUMBER	AMEND.
12301-BE1-060	G



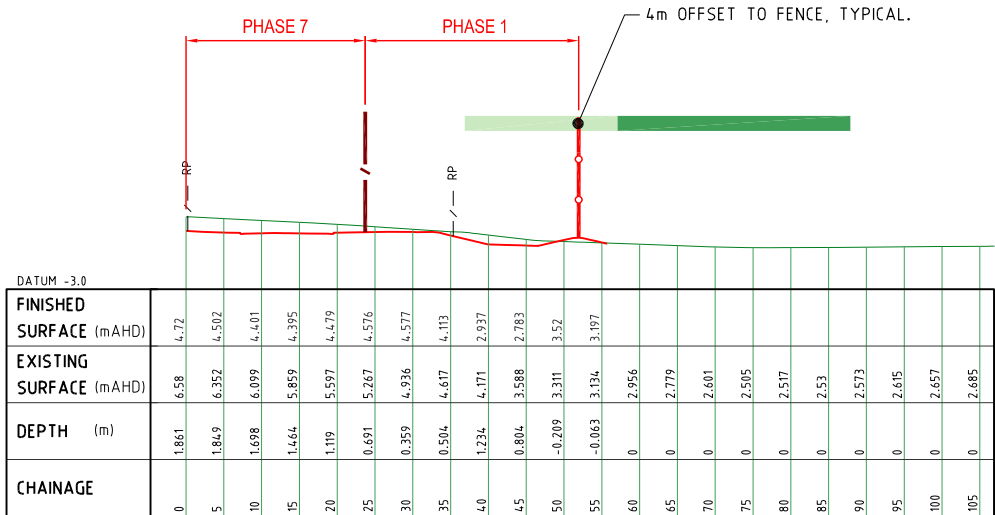
LONGITUDINAL SECTION 1

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Vertical scale 1:1000



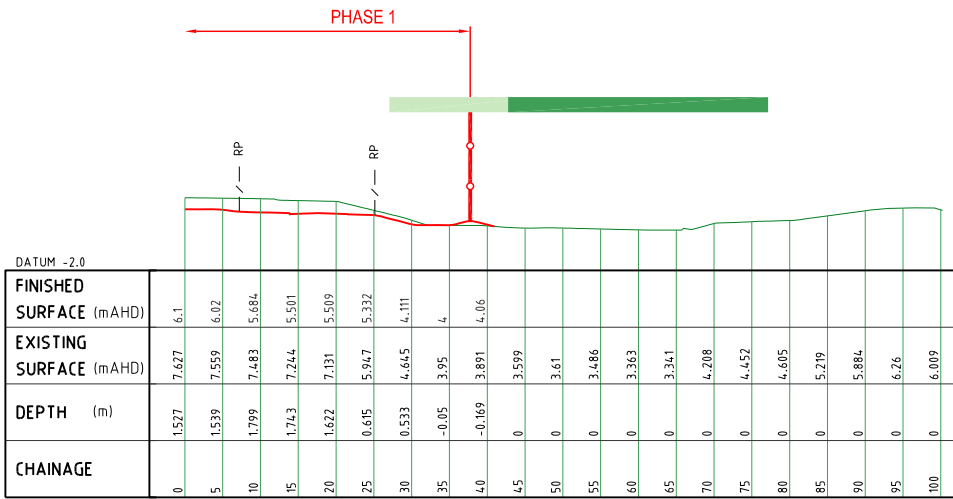
LONGITUDINAL SECTION 2

Horizontal scale 1:1000
Vertical scale 1:1000



LONGITUDINAL SECTION 4

Horizontal scale 1:1000
Vertical scale 1:1000



LONGITUDINAL SECTION 3

Horizontal scale 1:1000
Vertical scale 1:1000

EARTHWORKS IN 50m ECOLOGICAL BUFFER
AS ALLOWED BY CONDITION 5 & A12
PARAGRAPH 5, AND IN ACCORDANCE WITH
APPROVED DRAWINGS 12301-SK-44C & 46A.

LEGEND

- PERMANENT KOALA EXCLUSION FENCE
- TEMPORARY CONSTRUCTION LIMIT FENCE
- OUTER 20m ECOLOGICAL BUFFER
- INNER 30m ECOLOGICAL BUFFER

PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28
PTY LTD

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES

DATE

TENDER

13-11-19

COUNCIL

XX-XX-XX

CONSTRUCTION

XX-XX-XX

D	27-05-20	SECTIONS AND NOTES AMENDED
C	30-03-20	SECTION AND NOTE AMENDED
B	16-08-19	SECTIONS AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE DATE

AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

JWA

Ecological Consultants

DRAWING TITLE

BULK EARTHWORKS
SECTIONS
SHEET 1

CONSTRUCTION ISSUE

MORTONS
urbansolutions

Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB

DRAWN CAB

APPROVED

NER 2953710

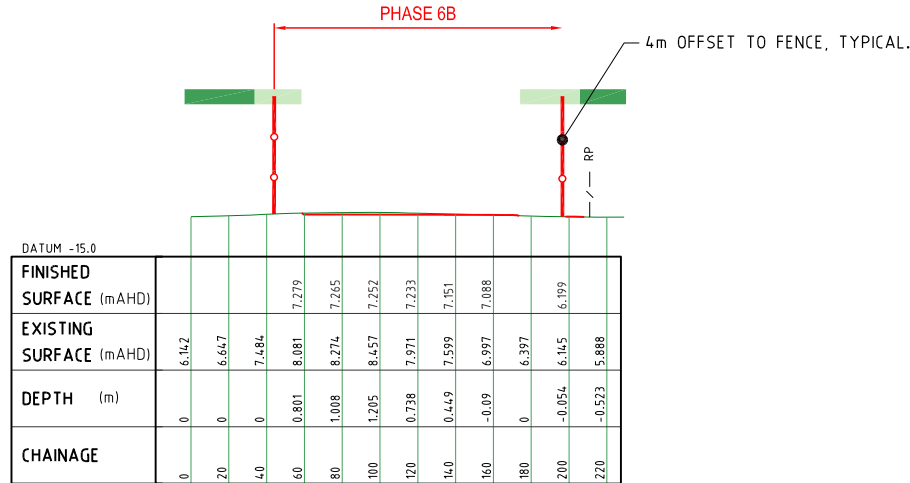
DATE 26-04-17

DRAWING NUMBER

12301-BE1-061

AMEND.

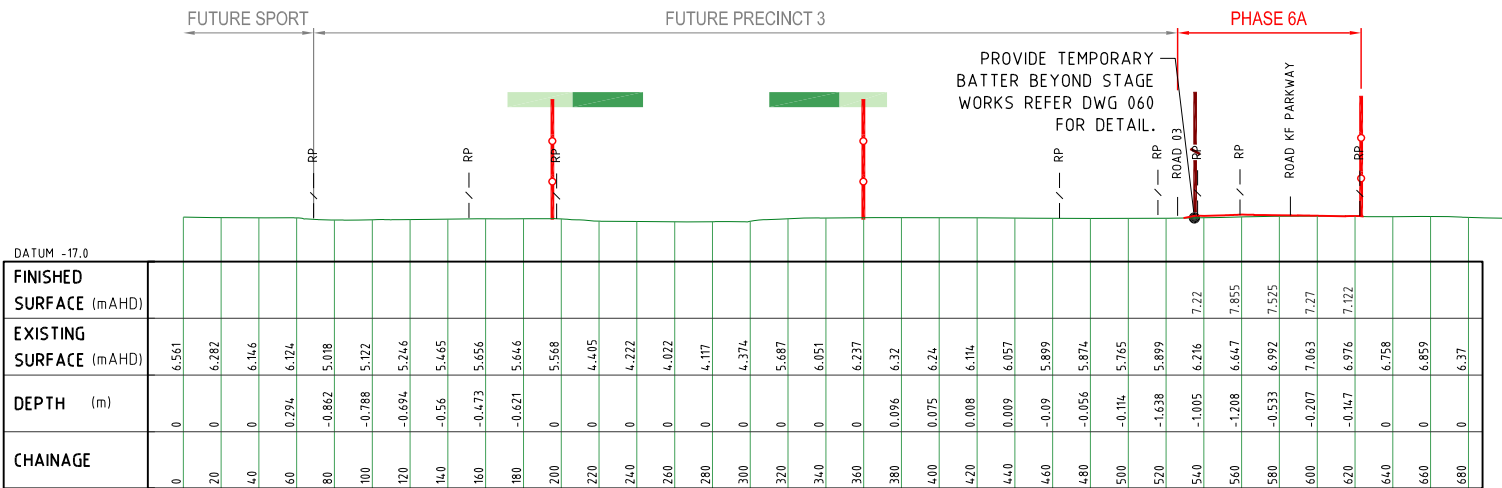
D



EARTHWORKS IN 50m ECOLOGICAL BUFFER AS ALLOWED BY CONDITION 5 & A12 PARAGRAPH 5, AND IN ACCORDANCE WITH APPROVED DRAWINGS 12301-SK-44C & 46A.

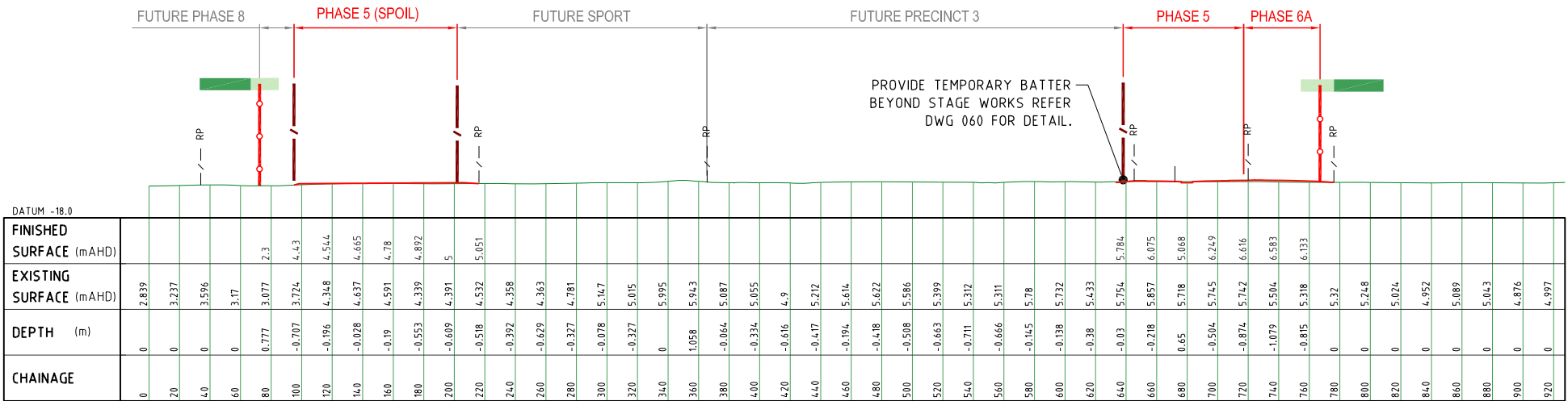
LONGITUDINAL SECTION B

Horizontal scale 14:000
Vertical scale 14:000



LONGITUDINAL SECTION C

Horizontal scale 14:000
Vertical scale 14:000



LONGITUDINAL SECTION D

Horizontal scale 14:000
Vertical scale 14:000

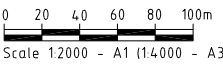
- LEGEND**
- PERMANENT KOALA EXCLUSION FENCE
 - TEMPORARY CONSTRUCTION LIMIT FENCE
 - OUTER 20m ECOLOGICAL BUFFER
 - INNER 30m ECOLOGICAL BUFFER

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
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Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT PROJECT 28 PTY LTD



ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

D	25-05-20	SECTIONS AMENDED
C	30-03-20	LIMIT, DESIGN AND NOTE AMENDED
B	16-08-19	SECTIONS AMENDED
A	29-01-19	PRIVATE CERTIFIER
PRE DATE	AMENDMENT	

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DRAWING TITLE

BULK EARTHWORKS SECTIONS SHEET 2

CONSTRUCTION ISSUE



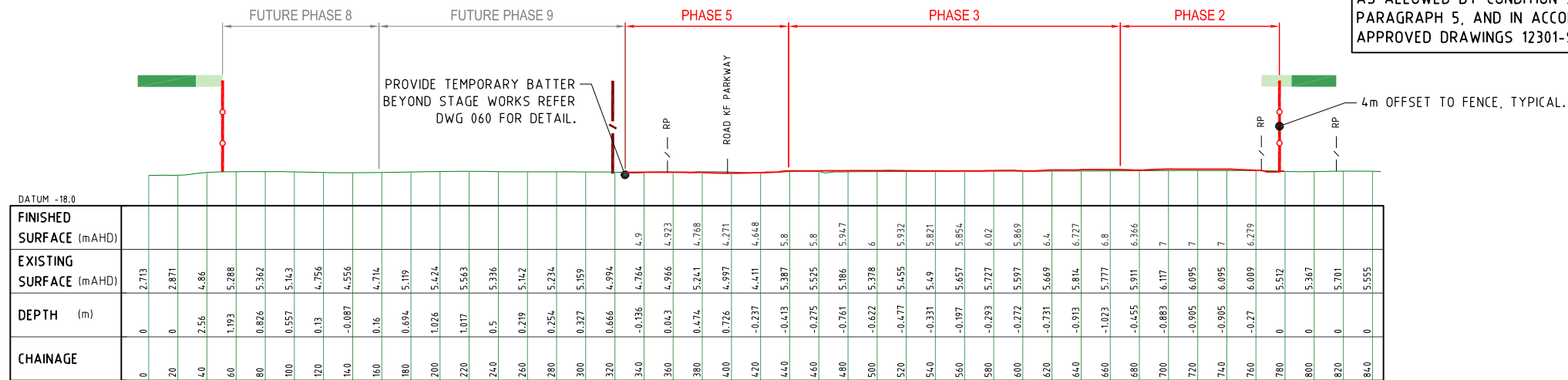
MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

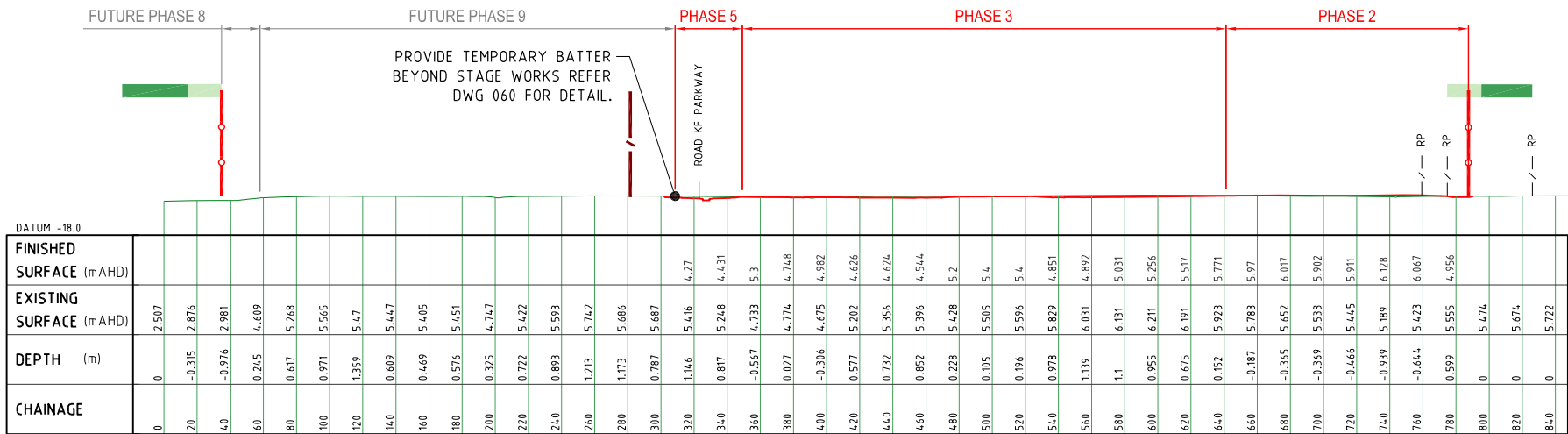
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APPROVED <i>[Signature]</i>	NER 2953710	DATE 26-04-17
DRAWING NUMBER		AMEND.
12301-BE1-062		D

D



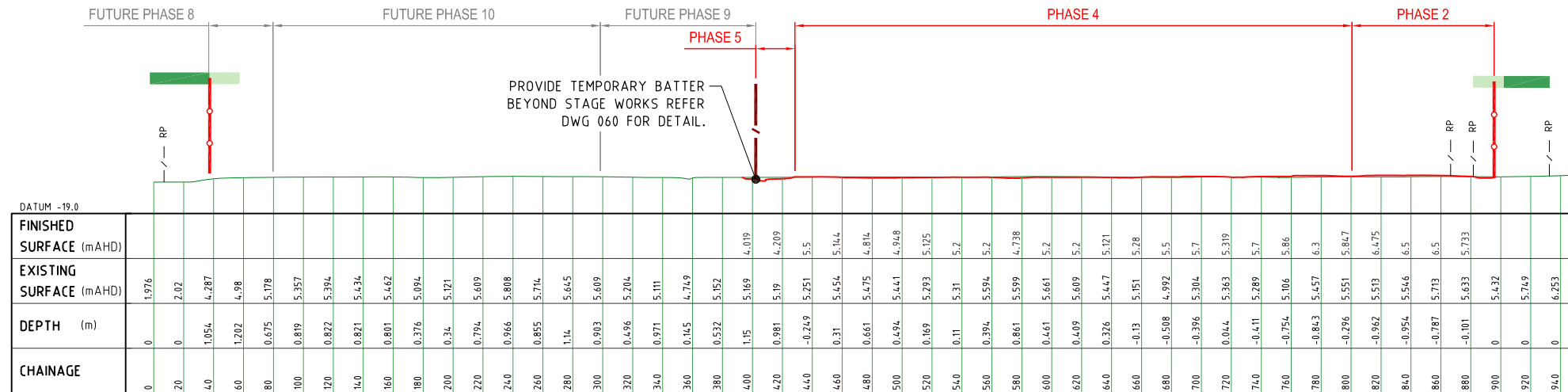
LONGITUDINAL SECTION E

Horizontal scale 14000
Vertical scale 14000



LONGITUDINAL SECTION F

Horizontal scale 14000
Vertical scale 14000



LONGITUDINAL SECTION G

Horizontal scale 14000
Vertical scale 14000

EARTHWORKS IN 50m ECOLOGICAL BUFFER AS ALLOWED BY CONDITION 5 & A12 PARAGRAPH 5, AND IN ACCORDANCE WITH APPROVED DRAWINGS 12301-SK-44C & 46A.

- LEGEND**
- PERMANENT KOALA EXCLUSION FENCE
 - TEMPORARY CONSTRUCTION LIMIT FENCE
 - OUTER 20m ECOLOGICAL BUFFER
 - INNER 30m ECOLOGICAL BUFFER

PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701

PARISH OF CUDGEN

COUNTY OF ROUS

CLIENT

PROJECT 28 PTY LTD

0 20 40 60 80 100m

Scale 1:2000 - A1 (1:4000 - A3)

ISSUES

DATE

TENDER

13-11-19

COUNCIL

XX-XX-XX

CONSTRUCTION

XX-XX-XX

D

25-05-20

SECTIONS AND SCALE AMENDED

C

30-03-20

SECTIONS AND NOTE AMENDED

B

16-08-19

SECTIONS AMENDED

A

29-01-19

PRIVATE CERTIFIER

PRE DATE

AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

JWA Ecological Consultants

DRAWING TITLE

BULK EARTHWORKS SECTIONS SHEET 3

CONSTRUCTION ISSUE

MORTONS urbansolutions

Urban & Regional Planning

Civil Engineering

Project Coordination

MUS Pty Ltd T/As: Mortons-Urban Solutions ABN: 39 116 375 065 mortons@urbansolutions.net.au www.urbansolutions.net.au Tel: 07 5571 1099 Fax: 07 5571 1088

Postal Address: PO Box 2484 Southport QLD 4215 Gold Coast Office: Suite 9, 19 Short St Southport QLD 4215

DESIGNED RB

DRAWN CAB

APPROVED

NER 2953710

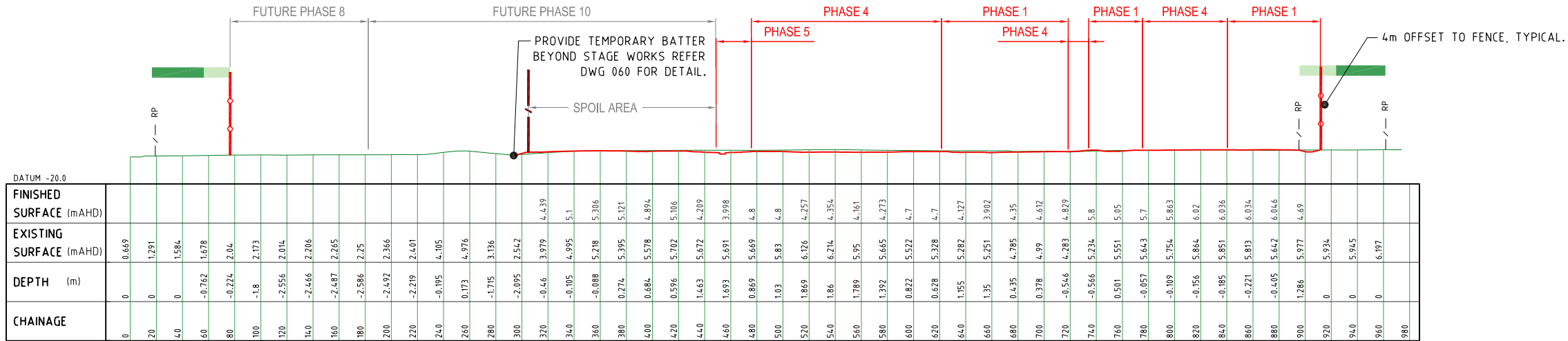
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DRAWING NUMBER

12301-BE1-063

AMEND.

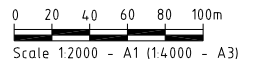
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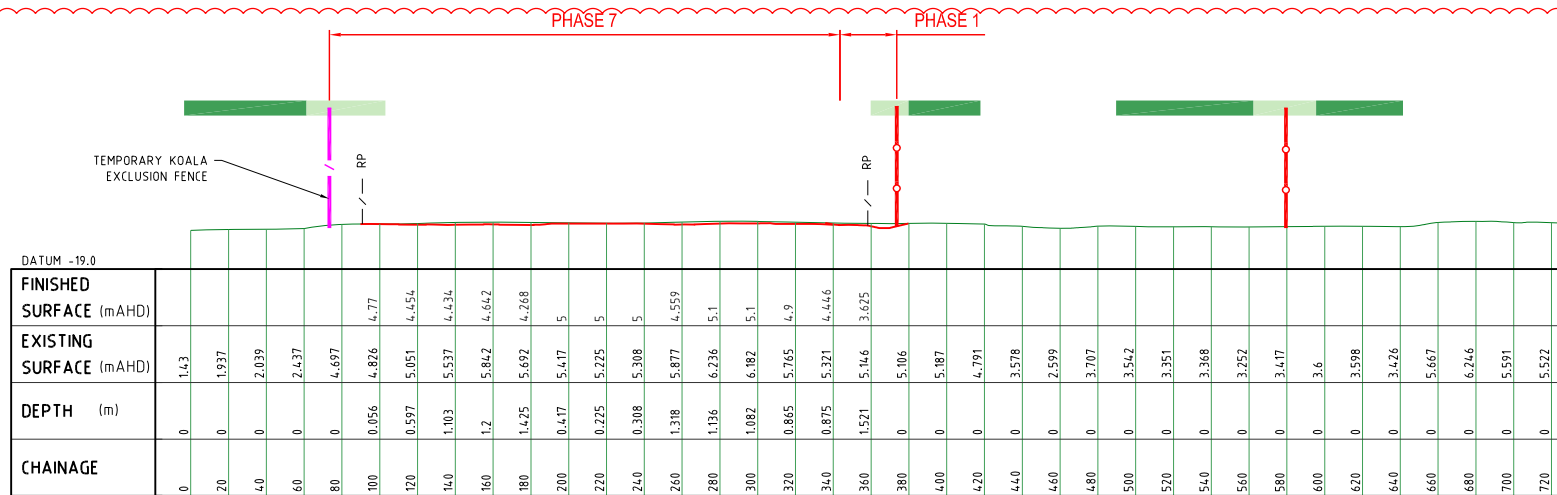
LONGITUDINAL SECTION H

Horizontal scale 1:4000
Vertical scale 1:4000

EARTHWORKS IN 50m ECOLOGICAL BUFFER AS ALLOWED BY CONDITION 5 & A12 PARAGRAPH 5, AND IN ACCORDANCE WITH APPROVED DRAWINGS 12301-SK-44C & 46A.

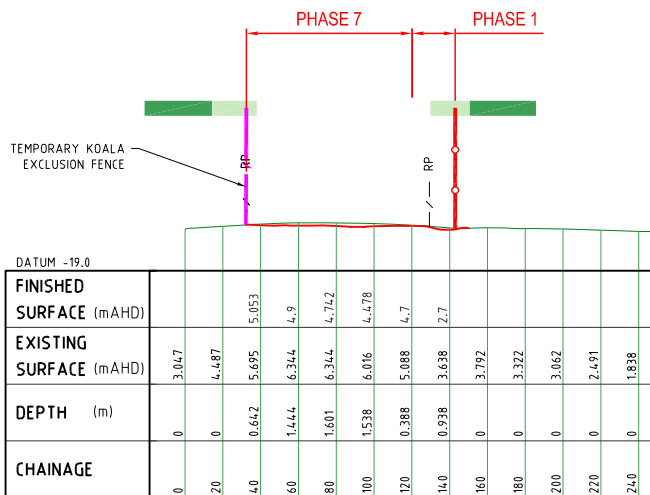


F



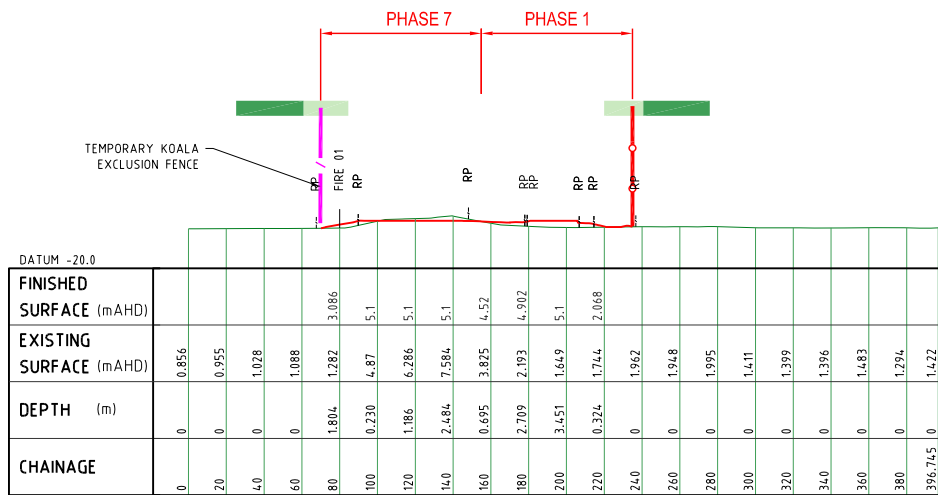
LONGITUDINAL SECTION I

Horizontal scale 1:4000
Vertical scale 1:4000



LONGITUDINAL SECTION J

Horizontal scale 1:4000
Vertical scale 1:4000



LONGITUDINAL SECTION K

Horizontal scale 1:2000
Vertical scale 1:2000

- LEGEND
- PERMANENT KOALA EXCLUSION FENCE
 - TEMPORARY CONSTRUCTION LIMIT FENCE
 - TEMPORARY KOALA EXCLUSION FENCE
 - OUTER 20m ECOLOGICAL BUFFER
 - INNER 30m ECOLOGICAL BUFFER

PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

ISSUES

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

SCALE

0 20 40 60 80 100m

Scale 1:2000 - A1 (1:4000 - A3)

PREPARED BY

DATE

AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

JWA Ecological Consultants

DRAWING TITLE

BULK EARTHWORKS SECTIONS SHEET 4

CONSTRUCTION ISSUE

MORTONS

urbansolutions

Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065

Postal Address
PO Box 2484
Southport QLD 4215

mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB

DRAWN CAB

APPROVED

NER 2953710

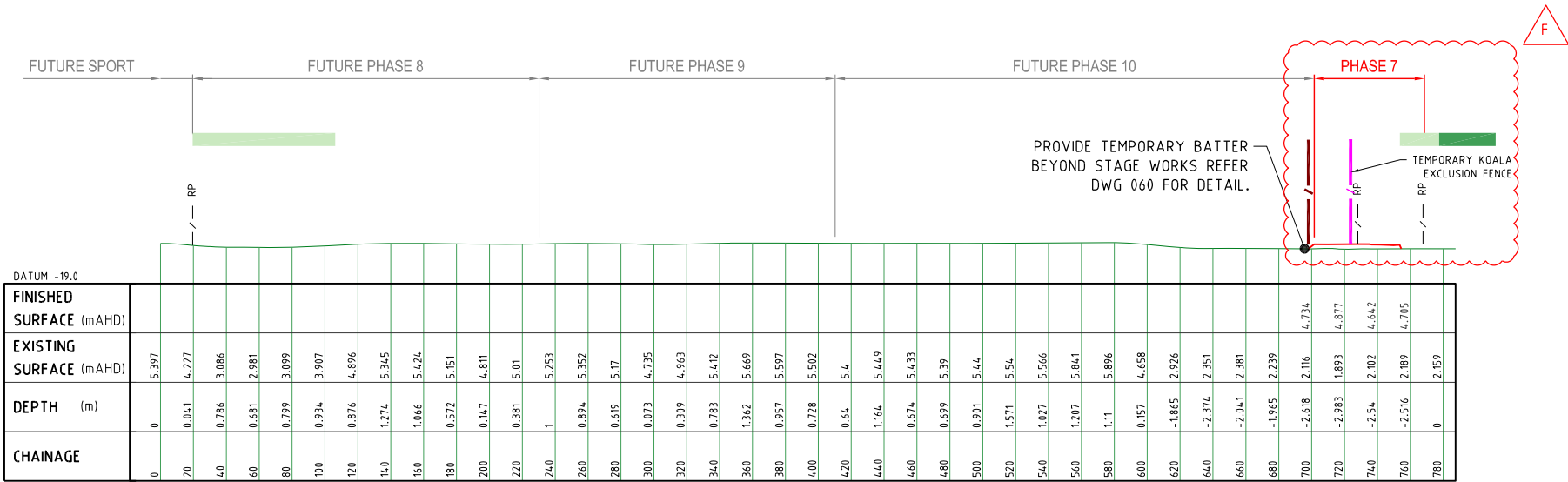
DATE 26-04-17

DRAWING NUMBER

AMEND.

12301-BE1-064

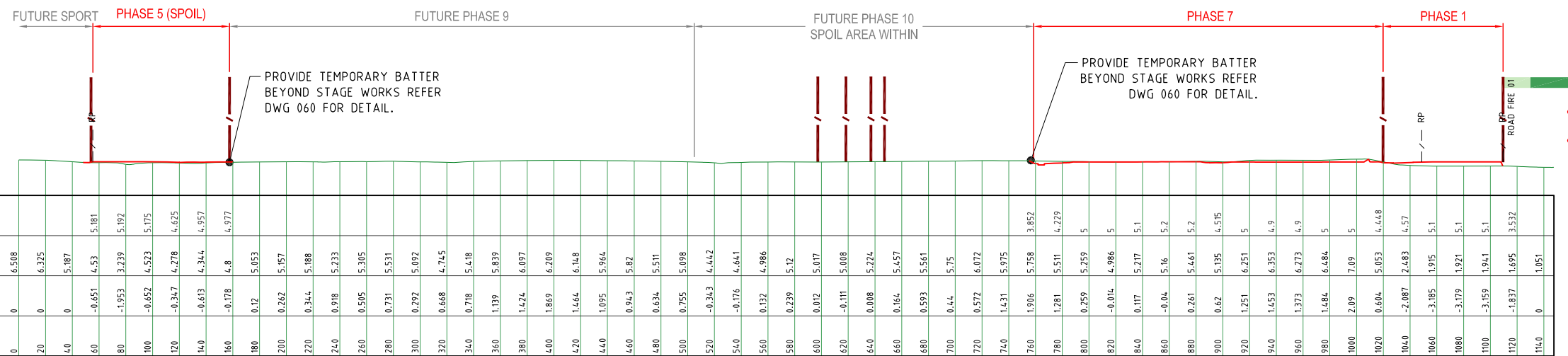
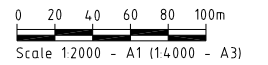
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LONGITUDINAL SECTION L

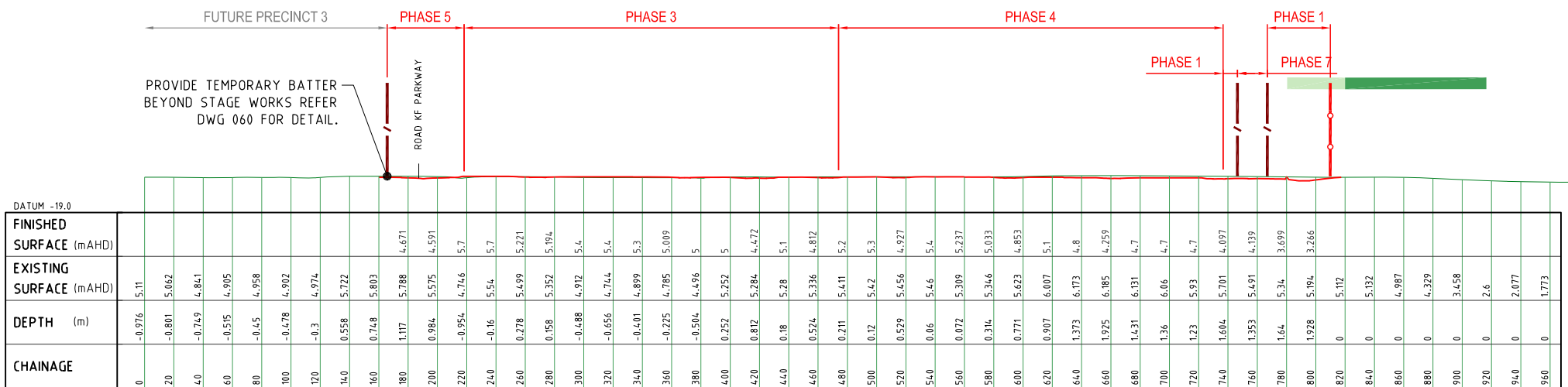
Horizontal scale 1:4000
Vertical scale 1:4000

EARTHWORKS IN 50m ECOLOGICAL BUFFER AS ALLOWED BY CONDITION 5 & A12 PARAGRAPH 5, AND IN ACCORDANCE WITH APPROVED DRAWINGS 12301-SK-44C & 46A.



LONGITUDINAL SECTION M

Horizontal scale 1:4000
Vertical scale 1:4000



LONGITUDINAL SECTION N

Horizontal scale 1:4000
Vertical scale 1:4000

EARTHWORKS IN 50m ECOLOGICAL BUFFER AS ALLOWED BY CONDITION 5 & A12 PARAGRAPH 5, AND IN ACCORDANCE WITH APPROVED DRAWINGS 12301-SK-44C & 46A.

LEGEND

- PERMANENT KOALA EXCLUSION FENCE
- TEMPORARY CONSTRUCTION LIMIT FENCE
- TEMPORARY KOALA EXCLUSION FENCE
- OUTER 20m ECOLOGICAL BUFFER
- INNER 30m ECOLOGICAL BUFFER

PROJECT NAME
KINGS FOREST

BECC - CONTRACT 1
REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN
COUNTY OF ROUS

CLIENT
PROJECT 28 PTY LTD

ISSUES

DATE

TENDER

COUNCIL

CONSTRUCTION

F

12-08-20

FENCE ALIGNMENT AMENDED

E

27-05-20

SECTIONS AND SCALE AMENDED

D

30-03-20

SECTIONS AND NOTE AMENDED

C

19-09-19

SECTION AMENDED

B

16-08-19

SECTIONS AMENDED

A

29-01-19

PRIVATE CERTIFIER

PRE DATE

AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

JWA Ecological Consultants

DRAWING TITLE

BULK EARTHWORKS SECTIONS SHEET 5

CONSTRUCTION ISSUE

MORTONS urbansolutions

Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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NER 2953710

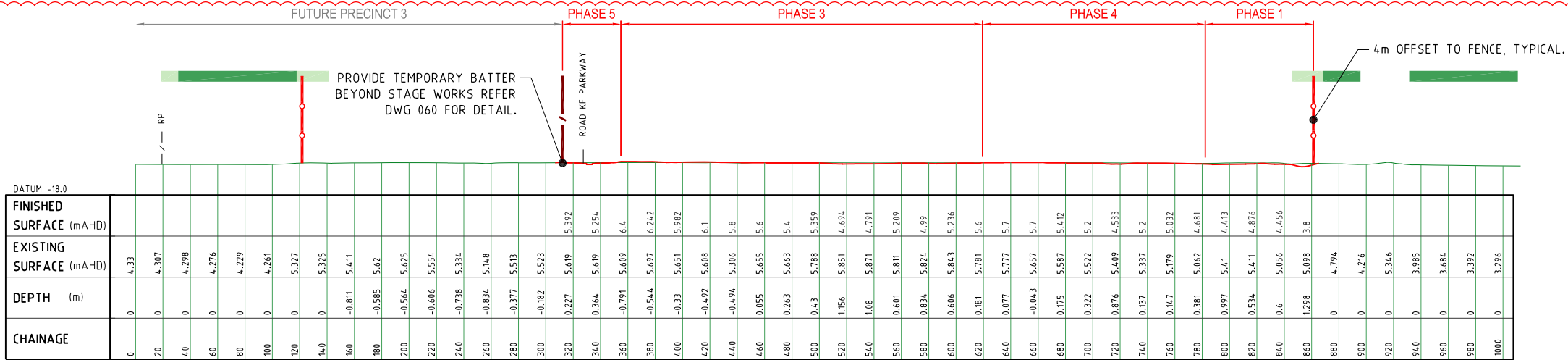
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DRAWING NUMBER

AMEND.

12301-BE1-065

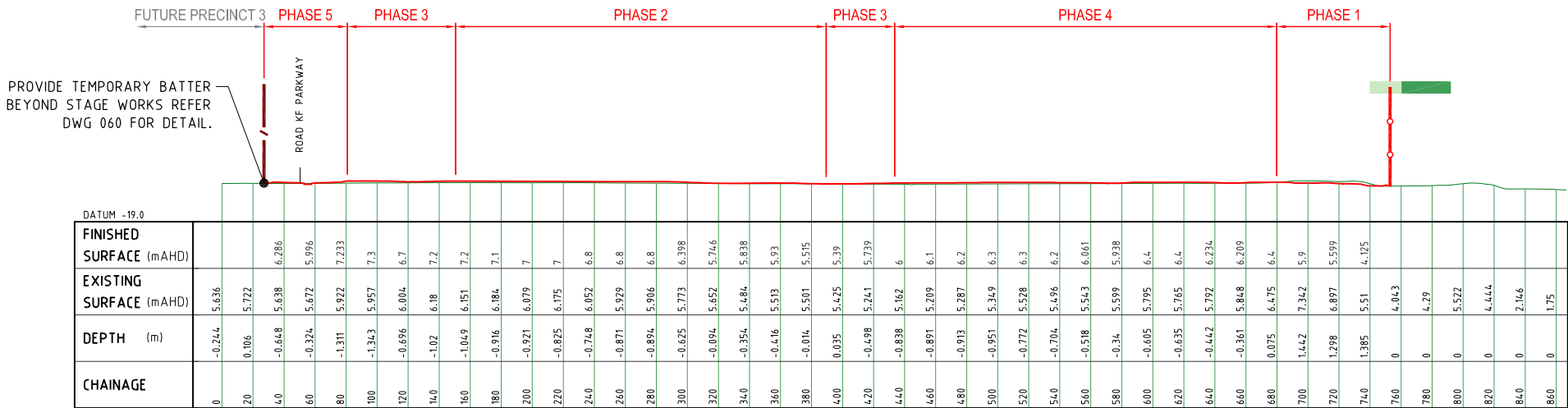
F



LONGITUDINAL SECTION O

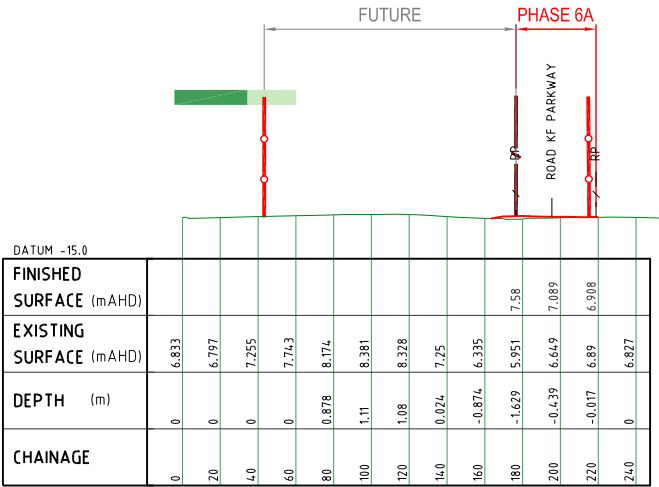
Horizontal scale 1:4000
Vertical scale 1:4000

EARTHWORKS IN 50m ECOLOGICAL BUFFER
AS ALLOWED BY CONDITION 5 & A12
PARAGRAPH 5, AND IN ACCORDANCE WITH
APPROVED DRAWINGS 12301-SK-44C & 46A.



LONGITUDINAL SECTION P

Horizontal scale 1:4000
Vertical scale 1:4000



LONGITUDINAL SECTION Q

Horizontal scale 1:4000
Vertical scale 1:4000

- LEGEND
- PERMANENT KOALA EXCLUSION FENCE
 - TEMPORARY CONSTRUCTION LIMIT FENCE
 - OUTER 20m ECOLOGICAL BUFFER
 - INNER 30m ECOLOGICAL BUFFER

PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701

PARISH OF CUDGEN .

COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

ISSUES

TENDER

COUNCIL

CONSTRUCTION

DATE

13-11-19

XX-XX-XX

XX-XX-XX

D

27-05-20

SECTIONS AND SCALE AMENDED

E

05-03-20

SECTION AND NOTE AMENDED

B

16-08-19

SECTIONS AMENDED

A

29-01-19

PRIVATE CERTIFIER

PRE DATE

AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

JWA

DRAWING TITLE

BULK EARTHWORKS SECTIONS SHEET 6

CONSTRUCTION ISSUE

MORTONS urban solutions

Urban & Regional Planning

Civil Engineering

Project Coordination

MUS Pty Ltd T/As:

Mortons-Urban Solutions

ABN: 39 116 375 065

mortons@urbansolutions.net.au

www.urbansolutions.net.au

Tel 07 5571 1099

Fax 07 5571 1088

Postal Address

PO Box 2484

Southport QLD 4215

Gold Coast Office

Suite 9, 19 Short St

Southport QLD 4215

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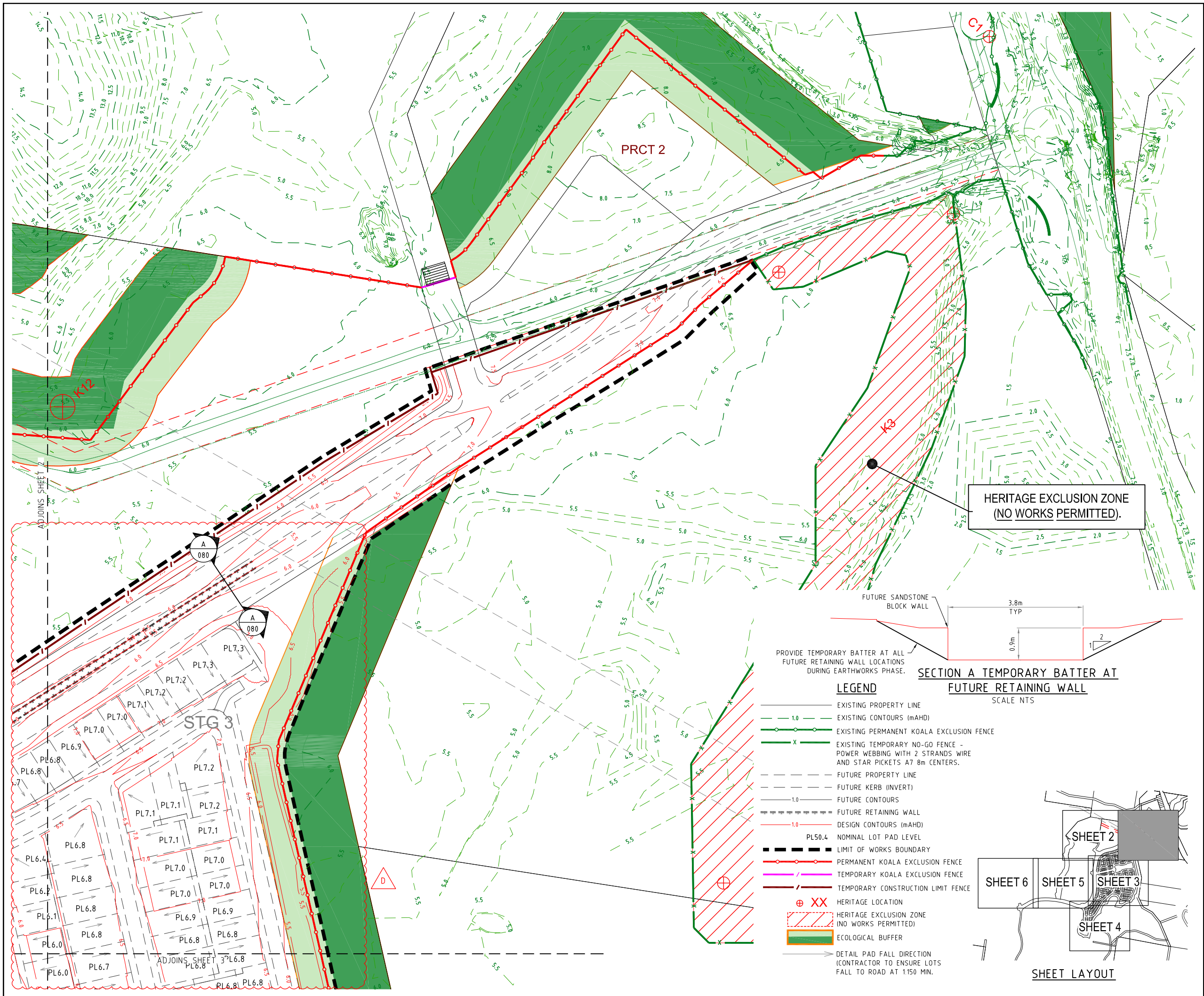
DATE 26-04-17

DRAWING NUMBER

12301-BE1-066

AMEND.

D



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

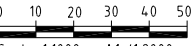
REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28
PTY LTD


NORTH


Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

D	30-02-20	PADS AMENDED
C	21-01-20	SHEET LAYOUT AMENDED
B	16-08-19	LEGEND AND NOTES AMENDED
A	29-01-19	PRIVATE CERTIFIER

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DRAWING TITLE

FINAL SURFACE
PLAN
SHEET 1

CONSTRUCTION ISSUE

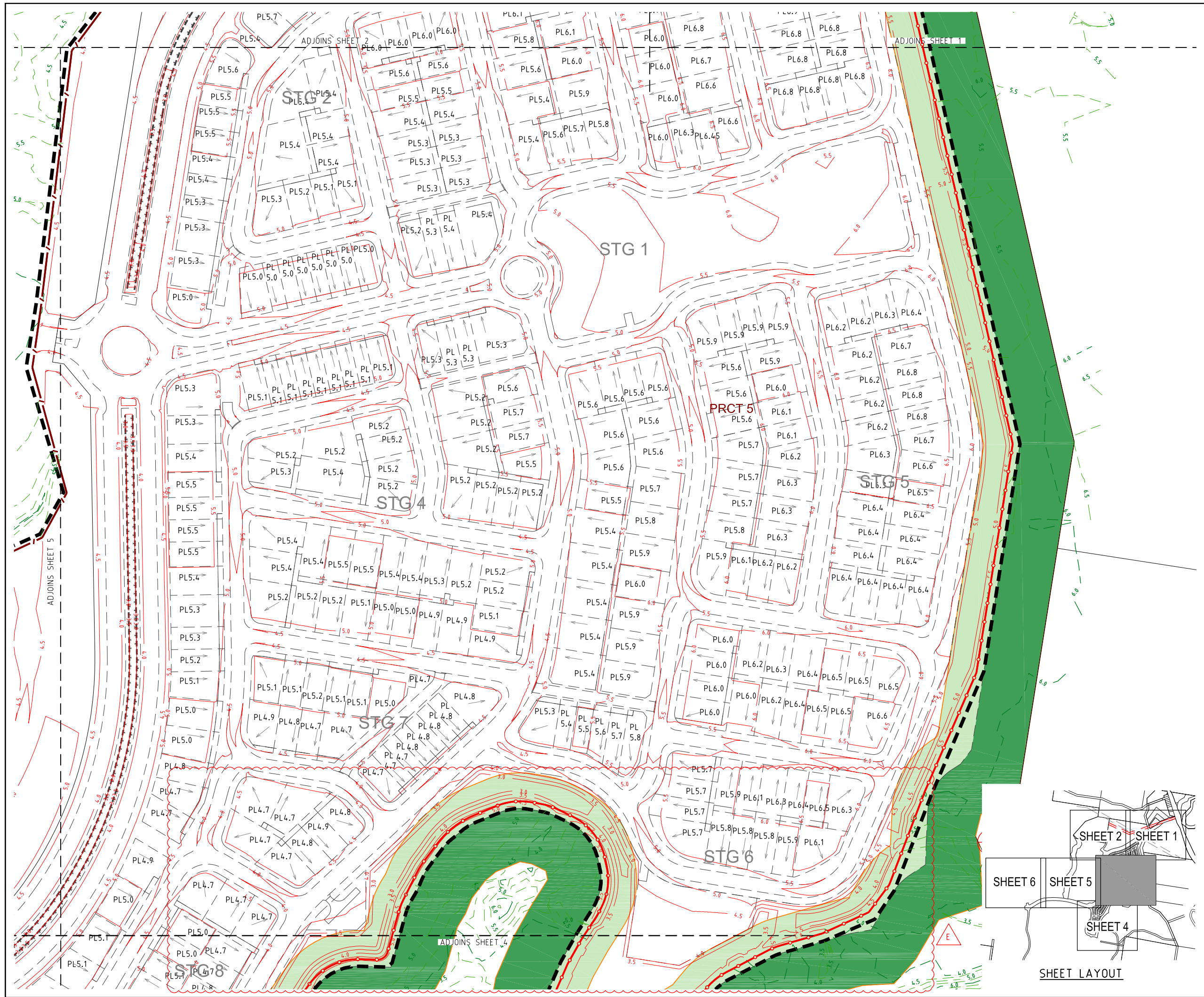

Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED	PL	NER	2953710
DRAWING NUMBER		DATE 27-11-18	
12301-BE1-080		AMEND.	
		D	



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN
COUNTY OF ROUS

CLIENT

PROJECT 28
PTY LTD

0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES		DATE
TENDER		13-11-19
COUNCIL		XX-XX-XX
CONSTRUCTION		XX-XX-XX

E	02-06-20	FINAL SURFACE AMENDED
D	30-03-20	PADS AMENDED
C	21-01-20	SHEET LAYOUT AMENDED
B	16-08-19	FINAL SURFACE AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE DATE	AMENDMENT

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DRAWING TITLE

FINAL SURFACE
PLAN
SHEET 3

CONSTRUCTION ISSUE

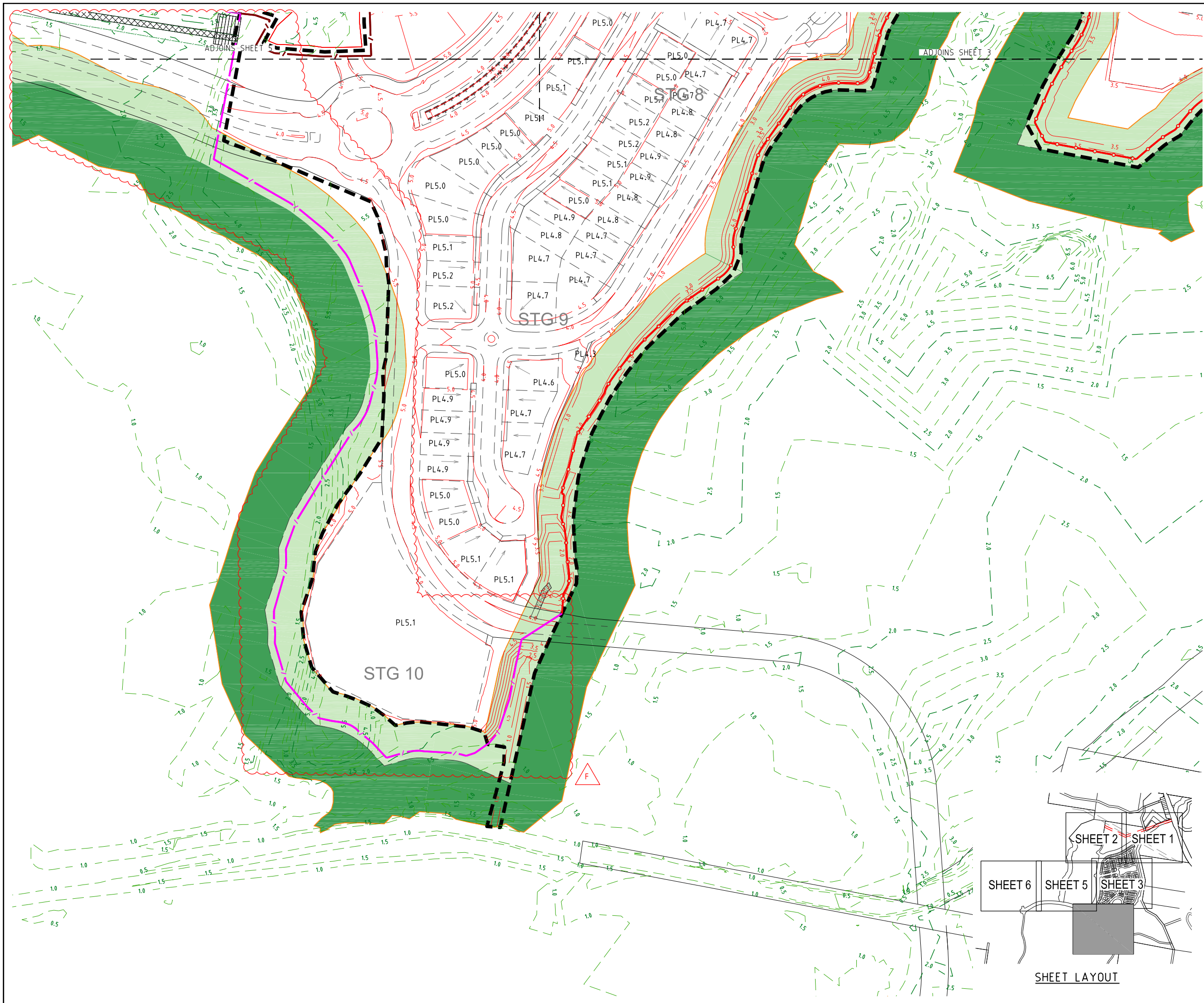
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Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED		NER 2953710	DATE 27-11-18
DRAWING NUMBER		AMEND.	
12301-BE1-082		E	



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28
PTY LTD

0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES		DATE
TENDER		13-11-19
COUNCIL		XX-XX-XX
CONSTRUCTION		XX-XX-XX

F	XX-XX-XX	FENCE AMENDED
E	02-06-20	FINAL SURFACE AMENDED
D	30-03-20	PADS AMENDED
C	21-01-20	SHEET LAYOUT AMENDED
B	16-08-19	FINAL SURFACE AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE	DATE	AMENDMENT

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FINAL SURFACE
PLAN
SHEET 4

CONSTRUCTION ISSUE

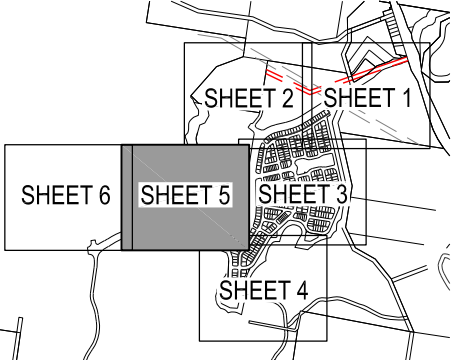
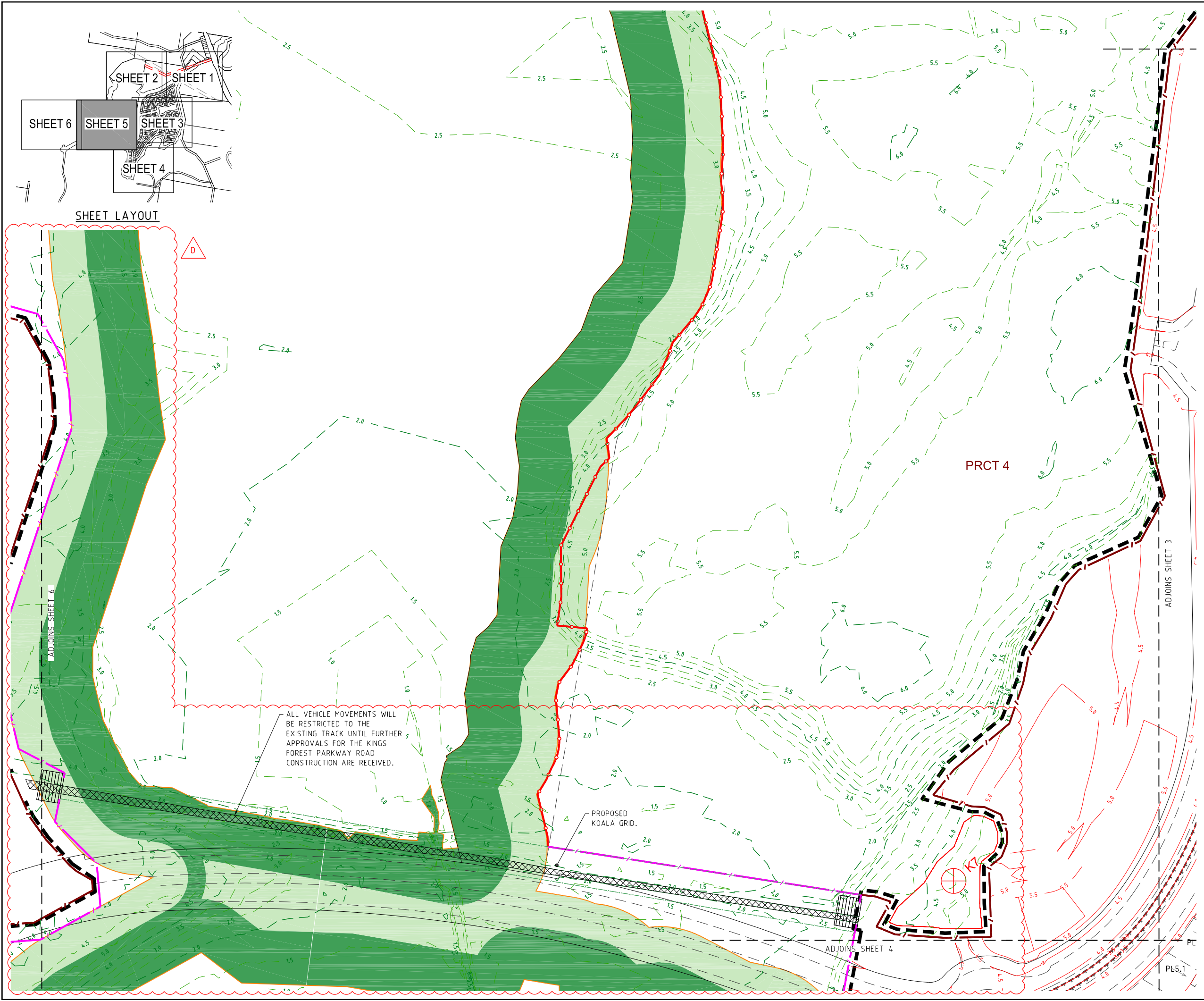
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 2953710	DATE 27-11-18
DRAWING NUMBER			AMEND.
12301-BE1-083			F



SHEET LAYOUT

PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701

PARISH OF CUDGEN .

COUNTY OF ROUS .

CLIENT

PROJECT 28

PTY LTD

0 10 20 30 40 50m

Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

D	12-08-20	FENCE ALIGNMENT AMENDED
C	30-03-20	CONTOURS AND NOTES AMENDED
B	21-01-20	SHEET LAYOUT AMENDED
A	19-09-19	ISSUE FOR INFORMATION

PRE DATE	AMENDMENT
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DRAWING TITLE

FINAL SURFACE PLAN

SHEET 5

CONSTRUCTION ISSUE

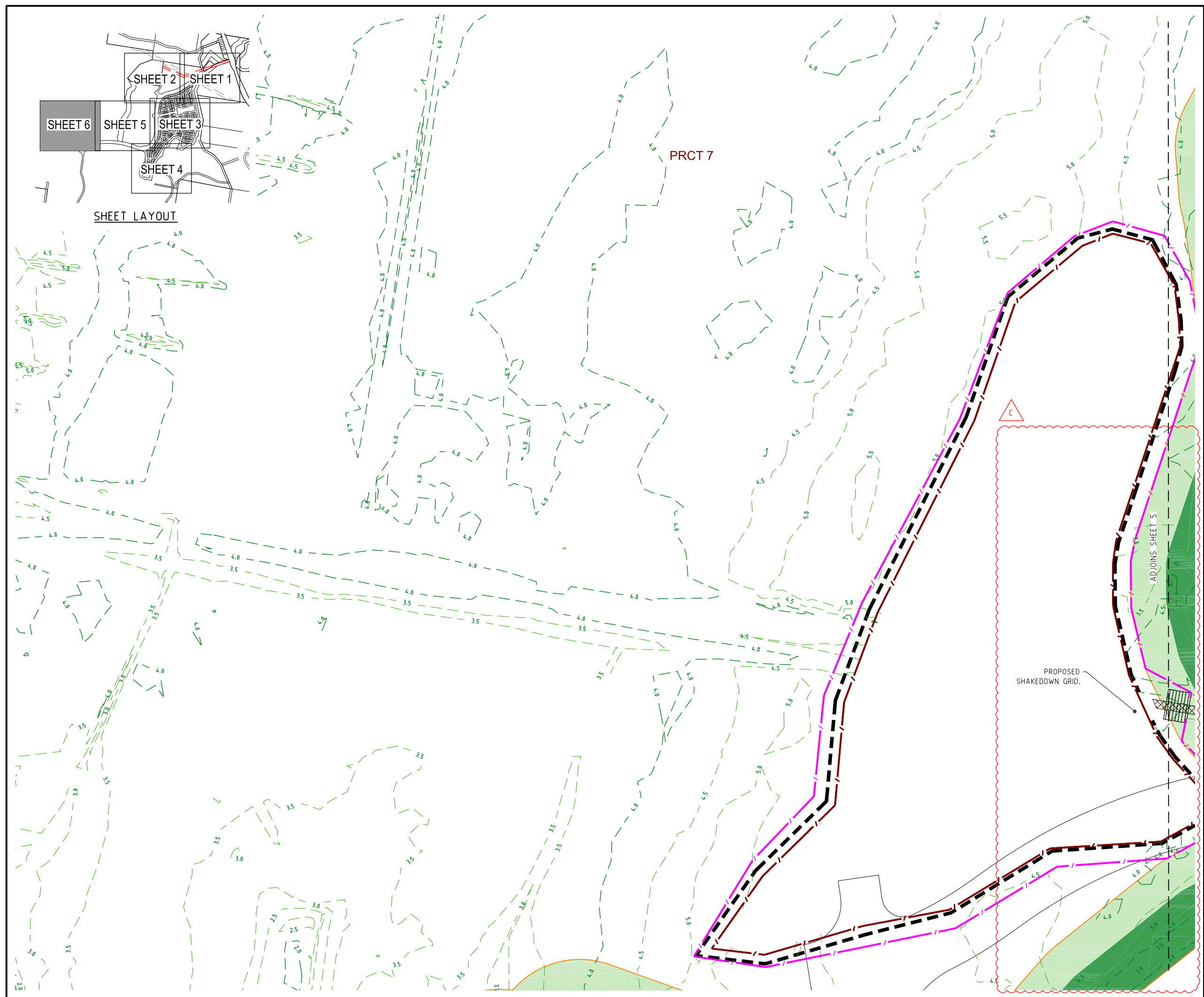
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Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 2953710	DATE 27-11-18
DRAWING NUMBER			AMEND.
12301-BE1-084			D



PROJECT	NAME
1	1
2	2
3	3
4	4
5	5
6	6
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100	100

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP871633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

C L I E N T

PROJECT 28
PTY LTD



ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	xx-xx-xx	

C	12-08-20	FENCE ALIGNMENT AMENDED	
B	30-03-20	FENCE ALIGNMENT AMENDED	
A	19-09-19	ISSUE FOR INFORMATION	
P R E	D A T E	A M E N D M E N T	

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D R A W I N G T I T L E

FINAL SURFACE
PLAN
SHEET 6

CONSTRUCTION ISSUE



MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address:
PO Box 2481
Southport QLD 4215

Gold Coast Office:
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED	<i>[Signature]</i>	NER 2953710	DATE 27-11-18
DRAWING NUMBER			AMEND.
12301-BE1-085			C

SEWER NOTES

VEGETATION PROTECTION

- A. WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 1.8 m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
- B. TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
- C. ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST.

SOIL

- A. TOPSOIL AND SUBSOIL SHALL BE STOCKPILED SEPARATELY.
- B. CARE SHALL BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.
- C. IF ACID SULPHATE SOILS EXIST IN THE WORKS AREA, THE CONTRACTOR MUST PREPARE A RISK ASSESSMENT BASED ON THE PROJECT ACID SULPHATE MANAGEMENT PLAN PREPARED BY MESSRS GILBERT SUTHERLAND.
- D. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).

CREEK CROSSINGS

- A. SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
- B. APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
- C. NO SOIL SHALL BE STOCKPILED WITHIN 5 m OF THE CREEK.

REHABILITATION

- A. PREDISTURBANCE SOIL PROFILES AND COMPACTION LEVELS SHALL BE REINSTATED.
- B. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

SAFETY

- A. THE DESIGN AND CONSTRUCTION OF THE WORKS SHALL COMPLY WITH ALL NEW SOUTH WALES LEGISLATION.

GENERAL

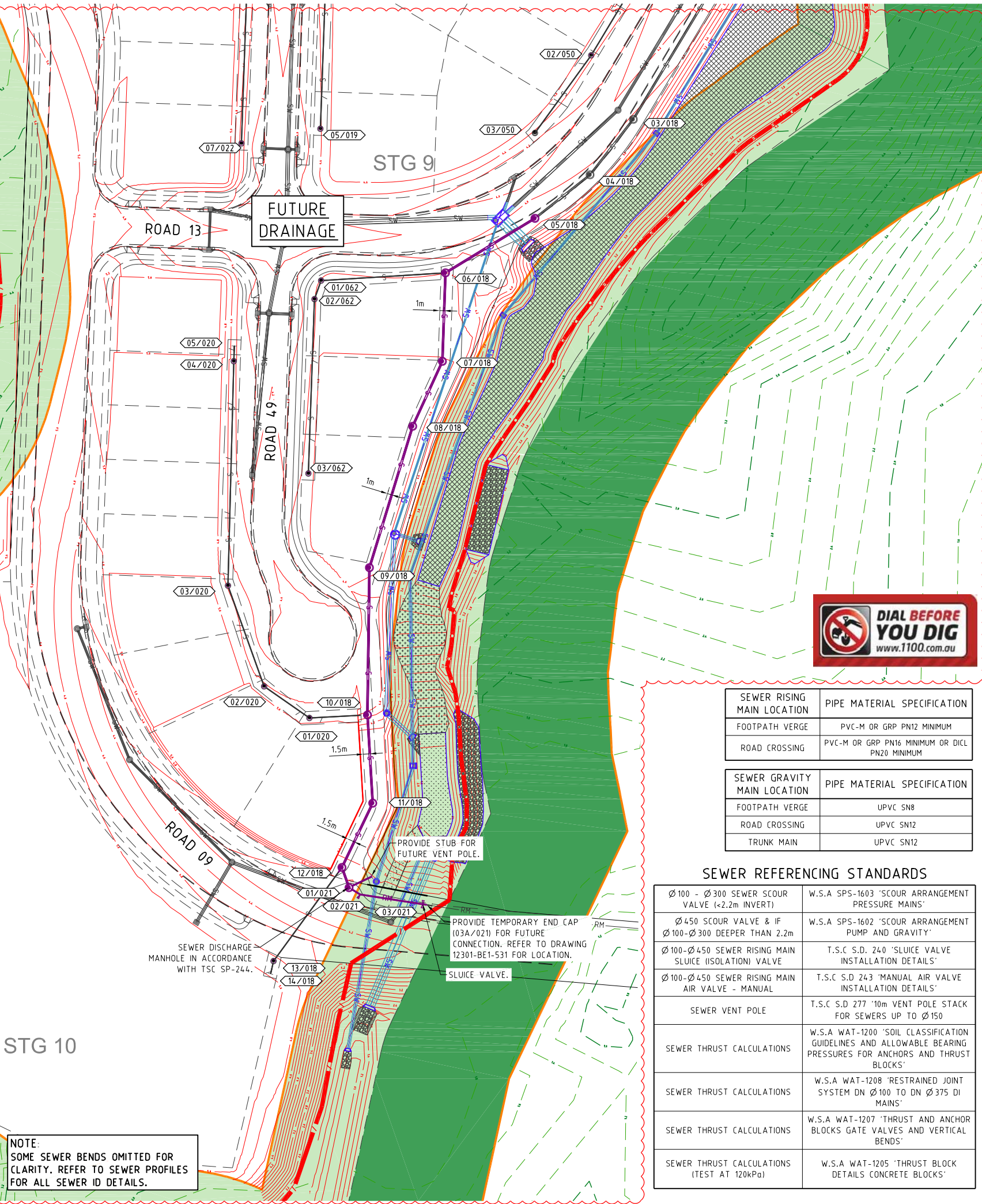
1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH SEWERAGE CODE OF AUSTRALIA WSA 02-2014, WSA 04-2005, WSA 07-2007 UNLESS OTHERWISE SPECIFIED IN TWEED SHIRE COUNCIL DEVELOPMENT DESIGN SPECIFICATION D12, OR CONSTRUCTION SPECIFICATION C402 OR OTHERWISE SPECIFIED IN TSC SUBDIVISION MANUAL.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. THE CONSTRUCTION OF THE SEWERAGE WORK SHOWN ON THIS DRAWING SHALL BE SUPERVISED BY A NER REGISTERED ENGINEER PROFESSIONAL ENGINEER, TO THE SATISFACTION OF TWEED SHIRE COUNCIL. SEWERAGE WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO THE COUNCIL SEWERAGE SYSTEM.
4. ALL WORK ASSOCIATED WITH LIVE SEWERS OR MAINTENANCE HOLES SHALL BE CARRIED OUT BY DEVELOPER'S APPROVED CONTRACTOR UNDER THE SUPERVISION OF TWEED SHIRE COUNCIL'S AGENT AT THE DEVELOPER'S COST.
5. WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300 mm (LOOSE) IN DEPTH AND SHALL BE COMPACTED UNTIL THE COMPACTION IS NOT LESS THAN 95% OF THE MATERIALS MAXIMUM COMPACTION WHEN TESTED IN ACCORDANCE WITH A.S. 1289 (MODIFIED COMPACTION). TESTING SHALL BE CARRIED OUT AFTER EACH ALTERNATE LAYER. IN ALL SUCH CASES APPROVAL OF CONSTRUCTED SEWERS WILL NOT BE ISSUED BY THE TWEED SHIRE COUNCIL UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
6. WHERE SEWERS HAVE A GRADE OF 15 TO 29% OR STEEPER, BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TWEED SHIRE COUNCIL DEVELOPMENT CONSTRUCTION SPECIFICATION C402-23.
7. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES BEFORE COMMENCING WORKS.
8. BENCH MARK AND LEVELS TO AHD.

PROJECT SPECIFIC SEWER NOTES

- a. ALL SEWER MAIN TO BE AS PER SEWER PIPE SPECIFICATIONS TABLE.
- b. NOTWITHSTANDING THE NOTES ABOVE, ALL MATERIALS AND WORKS MUST BE IN ACCORDANCE WITH THE SERVICE PROVIDER'S APPROVAL CONDITIONS AND THE TWEED SHIRE COUNCIL DEVELOPMENT DESIGN AND CONSTRUCTION SPECIFICATIONS.
- c. THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR SEWER RATES UNLESS SCHEDULED OTHERWISE WITHIN THE CONTRACT.
- d. WATER AND ELECTRICAL CROSSING LOCATIONS ARE INDICATIVE ONLY. REFER TO PLANS TO DETERMINE PRECISE CROSSING LOCATIONS. WHERE SERVICE INDICATES CLASH WITH SEWER, SEWER TO TAKE PRECEDENCE, SERVICE TO BE CONSTRUCTED OVER OR UNDER SEWER ACCORDING TO TSC INSPECTION OFFICER INSTRUCTIONS.
- e. CONTRACTOR TO VERIFY DOWNSTREAM EXISTING PIPE LEVELS PRIOR TO COMMENCEMENT OF WORKS ON-SITE.
- f. MINIMUM 20MPA THRUST BLOCKS TO BE CONSTRUCTED AT ALL FLEXIBLE JOINTED BENDS IN ACCORDANCE WITH TWEED SHIRE COUNCIL SPECIFICATIONS C402.30 AND C271.
- g. CONTRACTOR TO PAY ALL FEES AND CHARGES ASSOCIATED WITH CONNECTIONS.
- h. MINIMUM CLEARANCE BETWEEN MAINS AND OTHER UNDERGROUND SERVICES AS OUTLINED IN WSA02-2014-2014 TABLE 5.4 SHALL BE ADHERED TO

LEGEND

- S — EXISTING SEWER
- RM — EXISTING RISING MAIN
- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- 1.0 — EXISTING CONTOURS
- 225 — 225 — FUTURE RISING MAIN
- 450 — 450 — FUTURE RISING MAIN
- 1.0 — FUTURE CONTOURS
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- 1.0 — DESIGN CONTOURS
- 275 — 275 — PROPOSED SEWER MAIN
- SITE PRECINCT
- LIMIT OF WORKS BOUNDARY
- 01-10 — SEWER PIT NO/LINE
- SEWER SCOUR VALVE (<Ø300)
- SEWER AIR VALVE (<Ø300)
- SEWER SCOUR VALVES (Ø450)
- SEWER AIR VALVE (Ø450)
- SEWER ISOLATION/SLUICE VALVE (ALL SIZES)
- SEWER BEND (ALL SIZES)
- SEWER VERTICAL BEND (ALL SIZES)
- SEWER PUMP STATION
- SW — FUTURE STORMWATER
- SW — PROPOSED STORMWATER
- MANHOLE
- HEADWALL
- SCOUR PROTECTION
- (10/001) DRAINAGE PIT & LINE NO.
- EXISTING PERMANENT KOALA EXCLUSION FENCE
- TEMPORARY KOALA EXCLUSION FENCE
- TEMPORARY CONSTRUCTION LIMIT FENCE
- HERITAGE LOCATION
- ECOLOGICAL BUFFER



SEWER RISING MAIN LOCATION	PIPE MATERIAL SPECIFICATION
FOOTPATH VERGE	PVC-M OR GRP PN12 MINIMUM
ROAD CROSSING	PVC-M OR GRP PN16 MINIMUM OR D1CL PN20 MINIMUM

SEWER GRAVITY MAIN LOCATION	PIPE MATERIAL SPECIFICATION
FOOTPATH VERGE	UPVC SN8
ROAD CROSSING	UPVC SN12
TRUNK MAIN	UPVC SN12

SEWER REFERENCING STANDARDS

Ø 100 - Ø 300 SEWER SCOUR VALVE (<2.2m INVERT)	W.S.A SPS-1603 'SCOUR ARRANGEMENT PRESSURE MAINS'
Ø 450 SCOUR VALVE & IF Ø 100-Ø 300 DEEPER THAN 2.2m	W.S.A SPS-1602 'SCOUR ARRANGEMENT PUMP AND GRAVITY'
Ø 100-Ø 450 SEWER RISING MAIN SLUICE (ISOLATION) VALVE	T.S.C S.D. 240 'SLUICE VALVE INSTALLATION DETAILS'
Ø 100-Ø 450 SEWER RISING MAIN AIR VALVE - MANUAL	T.S.C S.D. 243 'MANUAL AIR VALVE INSTALLATION DETAILS'
SEWER VENT POLE	T.S.C S.D. 277 '10m VENT POLE STACK FOR SEWERS UP TO Ø150
SEWER THRUST CALCULATIONS	W.S.A WAT-1200 'SOIL CLASSIFICATION GUIDELINES AND ALLOWABLE BEARING PRESSURES FOR ANCHORS AND THRUST BLOCKS'
SEWER THRUST CALCULATIONS	W.S.A WAT-1208 'RESTRAINED JOINT SYSTEM DN Ø100 TO DN Ø375 DI MAINS'
SEWER THRUST CALCULATIONS	W.S.A WAT-1207 'THRUST AND ANCHOR BLOCKS GATE VALVES AND VERTICAL BENDS'
SEWER THRUST CALCULATIONS (TEST AT 120kPa)	W.S.A WAT-1205 'THRUST BLOCK DETAILS CONCRETE BLOCKS'

NOTE:
SOME SEWER BENDS OMITTED FOR CLARITY. REFER TO SEWER PROFILES FOR ALL SEWER ID DETAILS.

PROJECT NAME
KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTRY OF ROUS .

CLIENT
PROJECT 28 PTY LTD



0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	30-07-20	

E	12-08-10	STORMWATER, LEGEND AND NOTE ADDED
D	13-07-20	SEWER ALIGNMENT, TABLES AND NOTES AMENDED
C	02-06-20	NOTES AMENDED
B	31-03-20	SEWER NOTES, STORMWATER AND FOOTPATH AMENDED
A	19-09-18	ISSUE FOR INFORMATION

PRE DATE AMENDMENT

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SEWER RETICULATION PLAN

CONSTRUCTION ISSUE

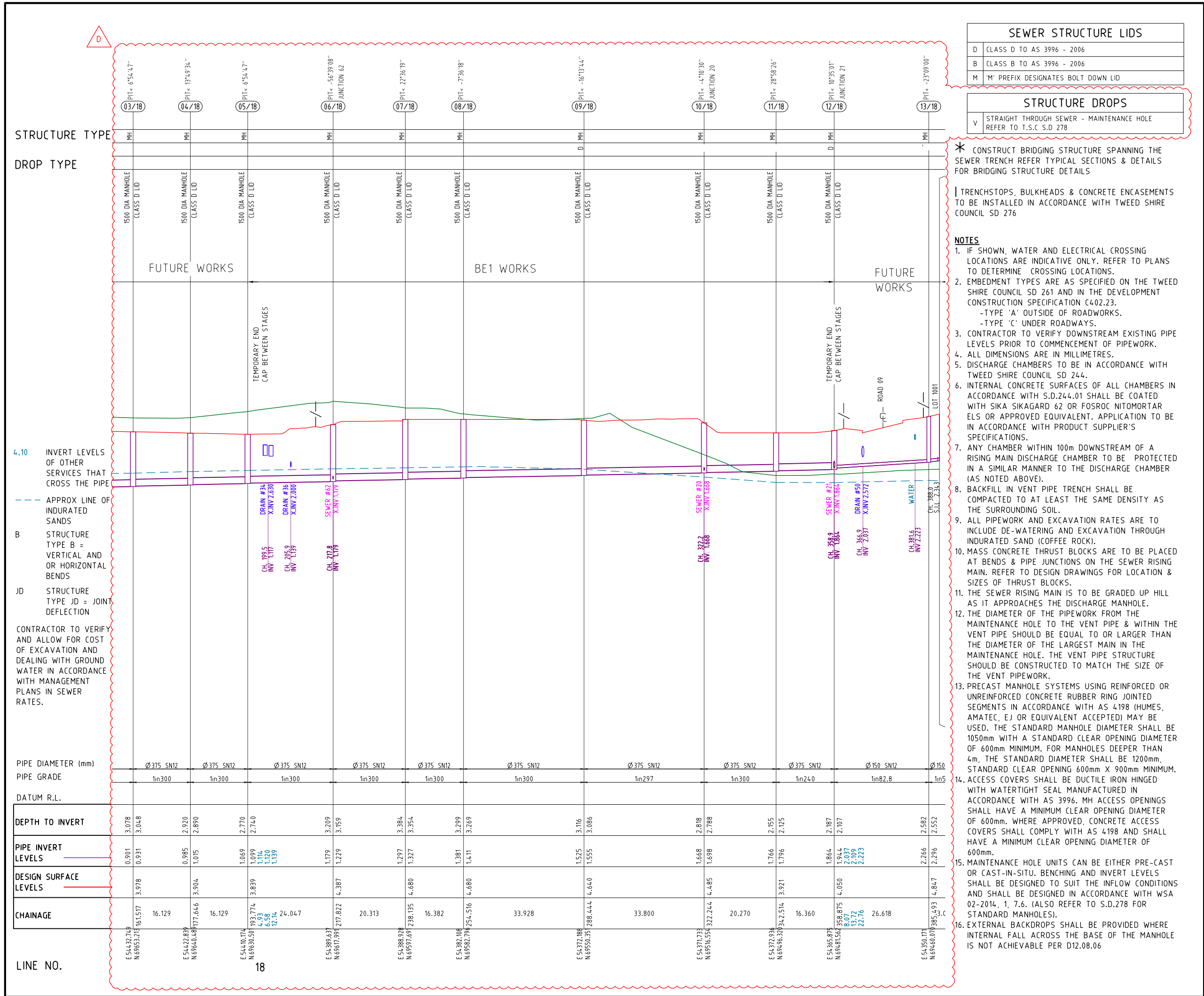


MUS Pty Ltd T/A:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED [Signature]	NER 2953710 DATE 19-09-18
DRAWING NUMBER 12301-BE1-500	AMEND. E



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701 PARISH OF CUDGEN . COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

Scale

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Horiz. Scale 1:500 - A1 (1:1000 - A3)

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Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	30-07-20

PRE	DATE	AMENDMENT
D	13-07-20	SEWER PROFILE AND NOTE AMENDED
C	03-06-20	NOTES AMENDED
B	30-03-20	SEWER PROFILE AND NOTES AMENDED
A	19-09-18	ISSUE FOR INFORMATION

ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

JWA

DRAWING TITLE

SEWER RETICULATION PROFILES SHEET 1

CONSTRUCTION ISSUE

MORTONS urbansolutions

Urban & Regional Planning Civil Engineering Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED	RB	NER	2953710

DRAWING NUMBER

12301-BE1-530

AMEND.

D

DROP TYPE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

— — — APPROX LINE OF
INDURATED
SANDS

B STRUCTURE
TYPE B =
VERTICAL AND
OR HORIZONTAL
BENDS

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JD      STRUCTURE
        TYPE JD = JOINT
        DEFLECTION

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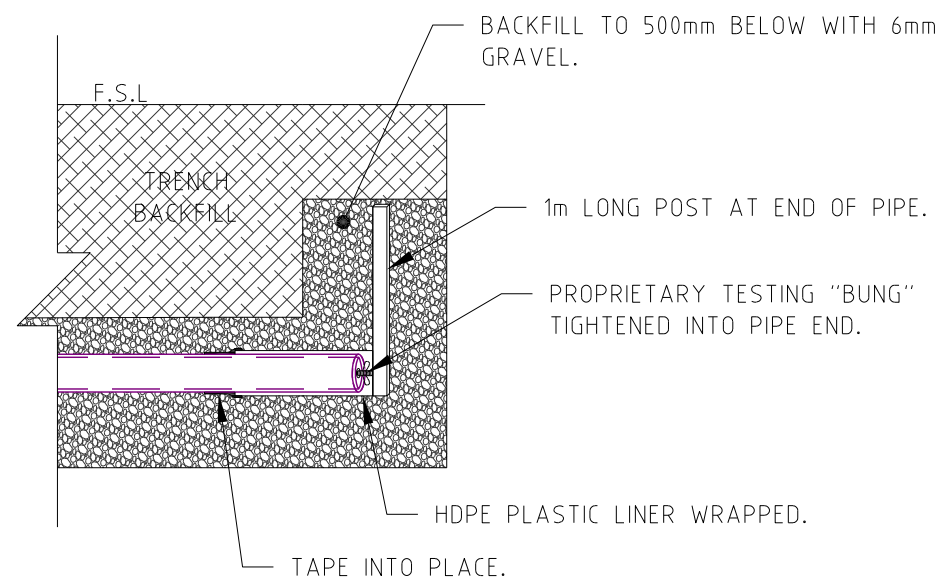
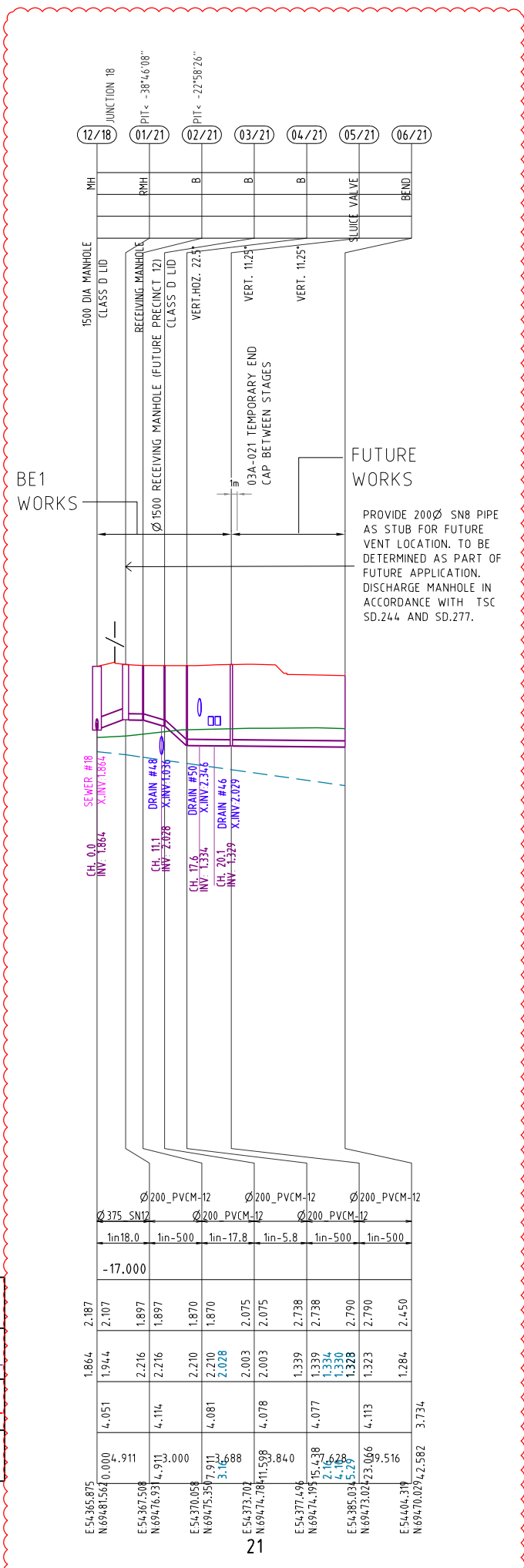
CONTRACTOR TO VERIFY
AND ALLOW FOR COST
OF EXCAVATION AND
DEALING WITH GROUND
WATER IN ACCORDANCE
WITH MANAGEMENT
PLANS IN SEWER
RATES.

PIPE DIAMETER (mm)
PIPE GRADE

DATUM R.L.

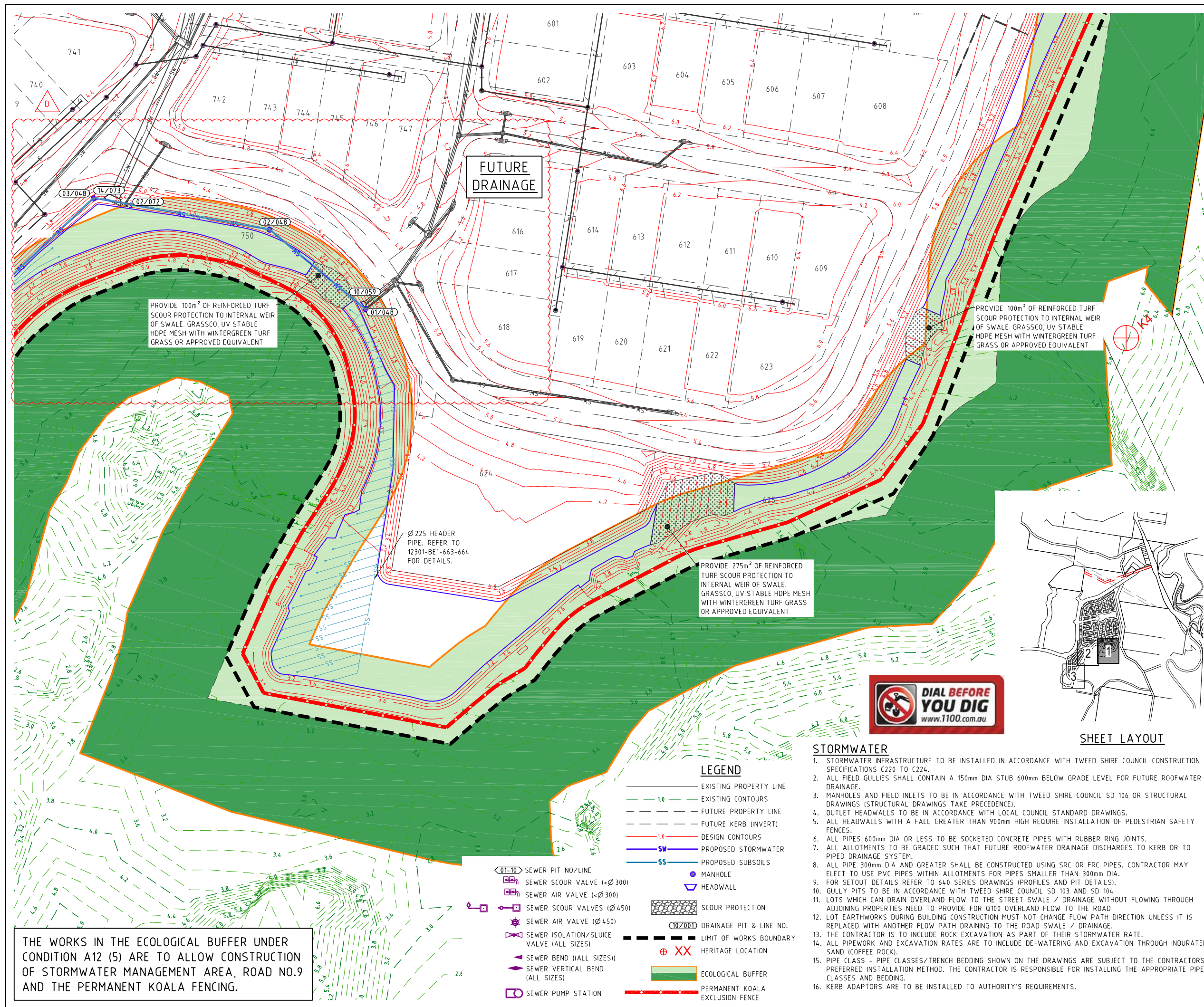
DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LINE NO.



TYPICAL PIPE END DETAIL
SCALE 1:20

PROJECT NAME KINGS FOREST BECC - CONTRACT 1 REAL PROPERTY DESCRIPTION Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701 PARISH OF CUDGEN . COUNTY OF ROUS .		
CLIENT PROJECT 28 PTY LTD		
0 5 10 15 20 25m Horiz. Scale 1:500 - A1 (1:1000 - A3) 0 1 2 3 4 5m Vert. Scale 1:100 - A1 (1:200 - A3) 0 0.2 0.4 0.6 0.8 1.0m Scale 1:20 - A1 (1:40 - A3)		
ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	30-07-20	
D	13-07-20	SEWER PROFILES AMENDED
C	03-04-20	DETAIL, NOTES AND PROFILE AMENDED
B	30-03-20	SEWER PROFILE AMENDED
A	19-09-18	ISSUE FOR INFORMATION
PRE	DATE	AMENDMENT
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DRAWING TITLE SEWER RETICULATION PROFILES SHEET 2 CONSTRUCTION ISSUE		
MORTONS urbansolutions Urban & Regional Planning Civil Engineering Project Coordination		
MUS Pty Ltd T/as: Mortons-Urban Solutions ABN: 39 116 375 065 mortons@urbansolutions.net.au www.urbansolutions.net.au Tel 07 5571 1099 Fax 07 5571 1088		Postal Address PO Box 2484 Southport QLD 4215 Gold Coast Office Suite 9, 19 Short St Southport QLD 4215
DESIGNED	RB	DRAWN
APPROVED	WER	DATE
DRAWING NUMBER		AMEND.
12301-BE1-531		D



PROJECT NAME
KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN
COUNTY OF ROUS

CLIENT
PROJECT 28 PTY LTD


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Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

PRE DATE	AMENDMENT
D	04-09-20 STORM ADDED
C	30-03-20 LOTS AND LEGEND AMENDED
B	16-08-19 NOTES AMENDED
A	29-01-19 PRIVATE CERTIFIER

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GILBERT SUTHERLAND JWA
Ecological Consultants

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STORMWATER DRAINAGE PLAN SHEET 1

CONSTRUCTION ISSUE

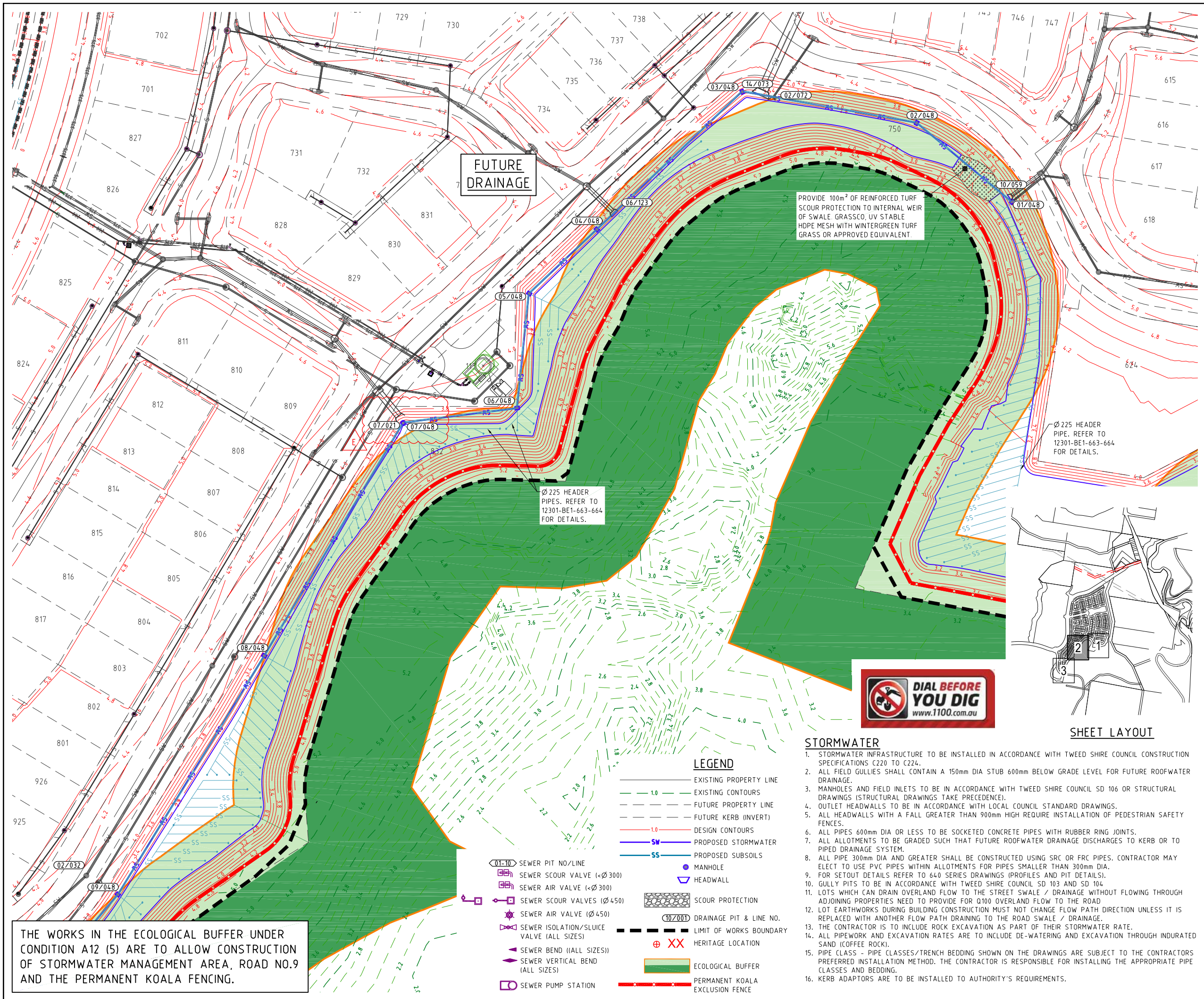
MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/A:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

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APPROVED		NER	2953710
DRAWING NUMBER		DATE 27-11-18	
12301-BE1-601		AMEND.	
		D	



PROJECT NAME
KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
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Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD


Scale 1500 - A1 (1:1000 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

PRE DATE	AMENDMENT
E 21-10-20	PIT AMENDED
D 04-09-20	STORM ADDED
C 30-03-20	LOTS AND LEGEND AMENDED
B 16-08-19	NOTES AMENDED
A 29-01-19	PRIVATE CERTIFIER

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STORMWATER DRAINAGE PLAN SHEET 1

CONSTRUCTION ISSUE


MORTONS
urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/A:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 2953710	DATE 27-11-18
DRAWING NUMBER		AMEND.	
12301-BE1-602		E	

THE WORKS IN THE ECOLOGICAL BUFFER UNDER CONDITION A12 (5) ARE TO ALLOW CONSTRUCTION OF STORMWATER MANAGEMENT AREA, ROAD NO.9 AND THE PERMANENT KOALA FENCING.

FUTURE DRAINAGE

BLANK OFF END OF PIPE FOR FUTURE CONNECTION

REFER 640 SERIES PLANS FOR SCOUR PROTECTION DETAILS

REFER 660 SERIES DRAWINGS FOR SWALE DETAILS.

REFER 640 SERIES PLANS FOR SCOUR PROTECTION DETAILS

REFER 640 SERIES PLANS FOR SCOUR PROTECTION DETAILS

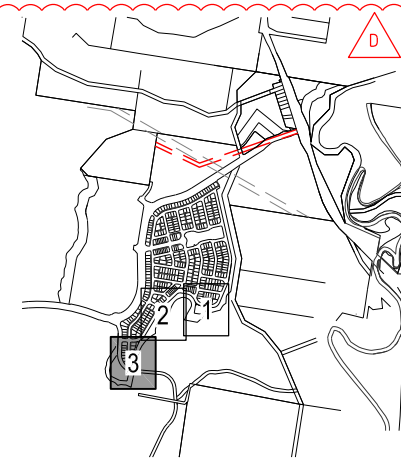
BLANK OFF END OF PIPE FOR FUTURE CONNECTION

REFER 640 SERIES PLANS FOR SCOUR PROTECTION DETAILS

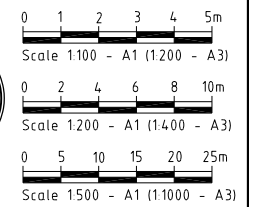
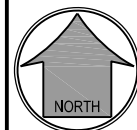
PROVIDE 290m² OF REINFORCED TURF SCOUR PROTECTION TO INTERNAL WEIR OF SWALE GRASSCO, UV STABLE HDPE MESH WITH WINTERGREEN TURF GRASS OR APPROVED EQUIVALENT

LEGEND

- EXISTING PROPERTY LINE
- EXISTING CONTOURS
- FUTURE PROPERTY LINE
- FUTURE KERB (INVERT)
- FUTURE CONTOURS
- DESIGN CONTOURS
- FUTURE STORMWATER
- SEWER WORKS SUBJECT TO SEPARATE APPLICATION
- PROPOSED STORMWATER
- MANHOLE
- HEADWALL
- SCOUR PROTECTION
- DRAINAGE PIT & LINE NO.
- LIMIT OF WORKS BOUNDARY
- ECOLOGICAL BUFFER
- PERMANENT KOALA EXCLUSION FENCE
- TEMPORARY KOALA EXCLUSION FENCE
- TEMPORARY CONSTRUCTION LIMIT FENCE



SHEET LAYOUT



ISSUES		DATE
TENDER		13-11-19
COUNCIL		XX-XX-XX
CONSTRUCTION		XX-XX-XX

D	11-08-20	STORM. NOTES, DETAILS AND LEGEND AMENDED
C	11-03-20	SCOUR AND NOTES AMENDED
B	16-08-19	LIMIT OF WORKS AMENDED
A	29-01-19	PRIVATE CERTIFIER
PRE DATE	AMENDMENT	

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ASSOCIATED CONSULTANTS



DRAWING TITLE

STORMWATER DRAINAGE PLAN SHEET 2

CONSTRUCTION ISSUE

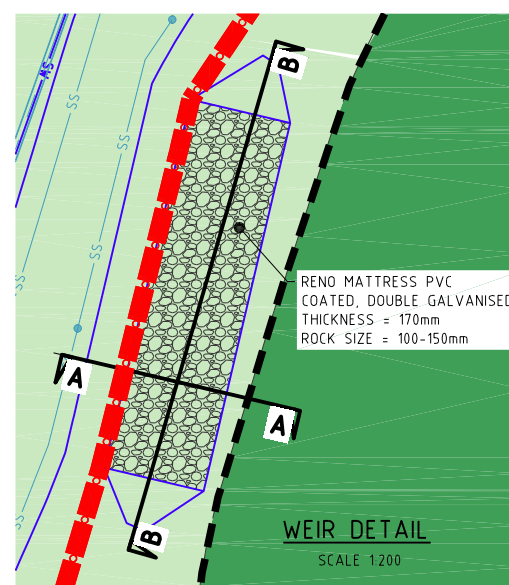


MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

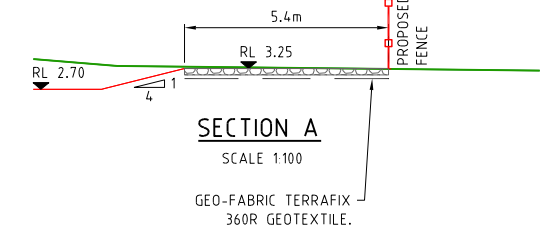
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED RB	NER 2953710 DATE 27-11-18
DRAWING NUMBER	AMEND.
12301-BE1-603	D



WEIR DETAIL

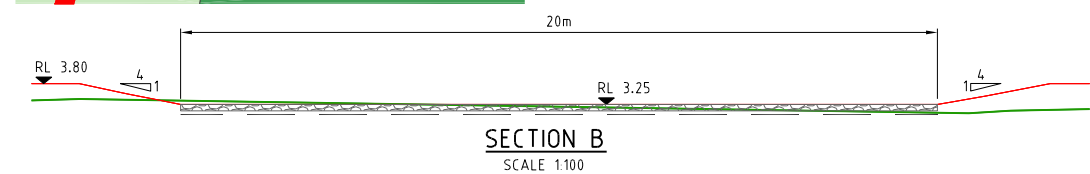
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SECTION A

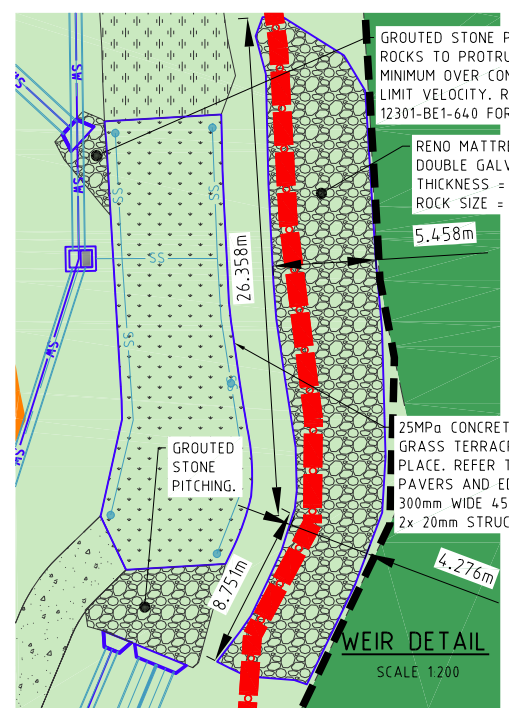
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GEO-FABRIC TERRAFIX 360R GEOTEXTILE.



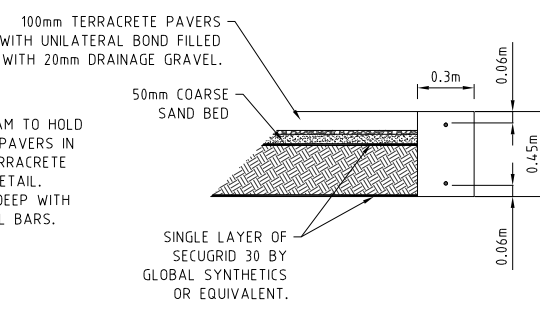
SECTION B

SCALE 1:100



WEIR DETAIL

SCALE 1:200



TERRACRETE PAVERS AND EDGE DETAIL

SCALE 1:20

RECOMMEND.

C

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\BULK EARTHWORKS\BE1\Current\12301-BE1-623.dwg, 21/10/2020 10:11:31 AM, 1:2

STRUCTURE NAME

STRUCTURE DESCRIPTION

08/48
GRATED INLET 900x600
B

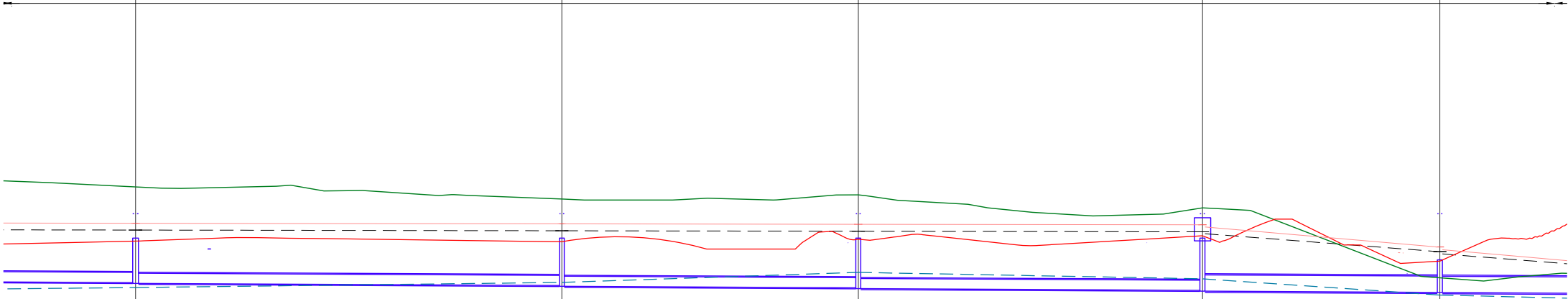
09/48
GRATED INLET 900x600

10/48
GRATED INLET 900x600

11/48
CUSTOM 900x1200 PIT C/W GRATED INLET 900x600
JOIN 290

12/48
GRATED INLET 900x600
C/W SUMP FOR SUBSOIL OUTLET

BE1 WORKS



PIPE GRADE (%)	0.100	0.100	0.100	0.100	0.100
PIPE DIAMETER (mm)	375	375	375	600	600
VELOCITY (m/s)	1.130	0.890	0.490	2.650	2.650
PIPE FLOW (m3/s)	0.113	0.091	0.054	0.750	0.750
PIPE CLASS	3	3	3	3	3
DATUM R.L.					
DEPTH TO INVERT	1.526 1.556	1.611 1.641	1.790 1.820	2.009 2.039	1.149 1.156
HYDRAULIC GRADE LINE	3.398 3.397	3.372 3.371	3.354 3.353	3.332 3.263	2.606 2.519
PIPE INVERT LEVELS	1.464 1.434 1.421	1.356 1.326 1.272	1.271 1.241 1.188	1.178 1.148 1.110	1.104 1.097
DESIGN SURFACE LEVELS	3.100	3.100	3.100	3.100	2.300
EXISTING SURFACE LEVELS	4.985	4.539	4.691	4.214	1.640
CHAINAGE	78.506 54.479.137 69716.925 13.57	54.594 385.589 69650.015 52.71	63.386 44.0.183 69608.279 53.12	43.718 503.569 69548.587 37.69	27.815 54.7.287 69504.873
DRAINAGE LINE					

PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701

PARISH OF CUDGEN .

COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m

Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m

Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

B	21-10-20	PROFILE AMENDED
A	29-01-19	PRIVATE CERTIFIER
PRE DATE	AMENDMENT	

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

JWA Ecological Consultants

DRAWING TITLE

STORMWATER PROFILES SHEET 4

CONSTRUCTION ISSUE

MORTONS urban solutions

Urban & Regional Planning

Civil Engineering

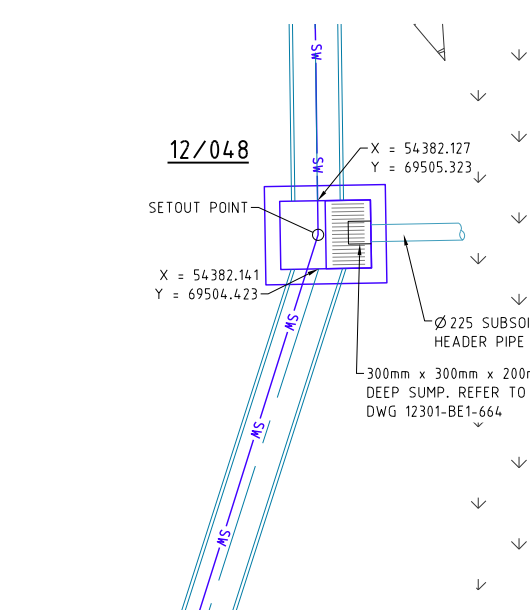
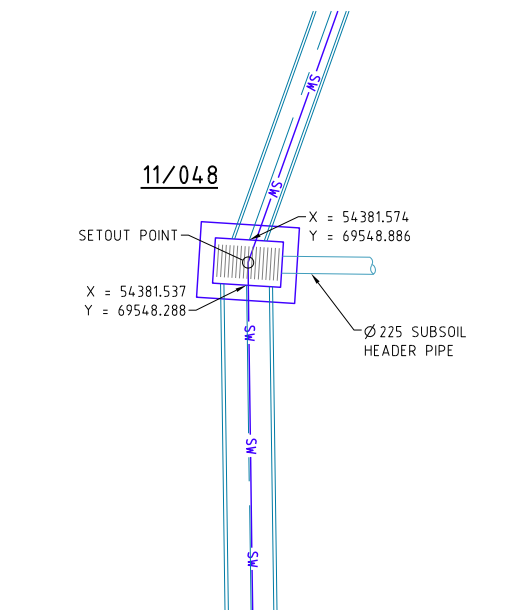
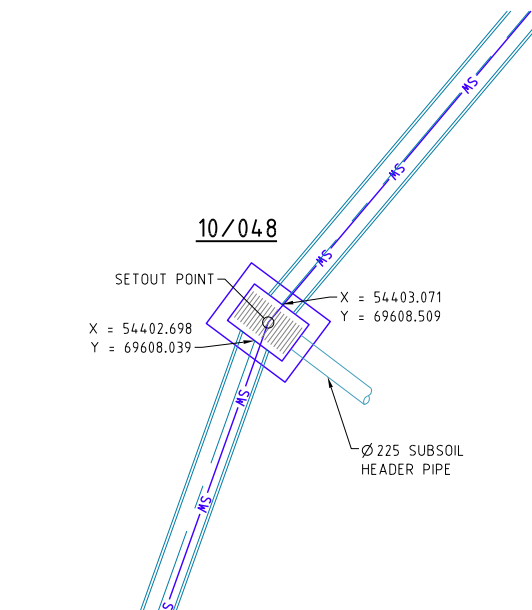
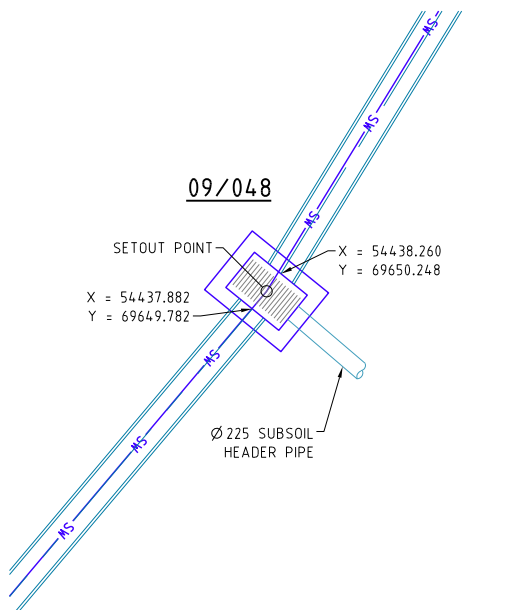
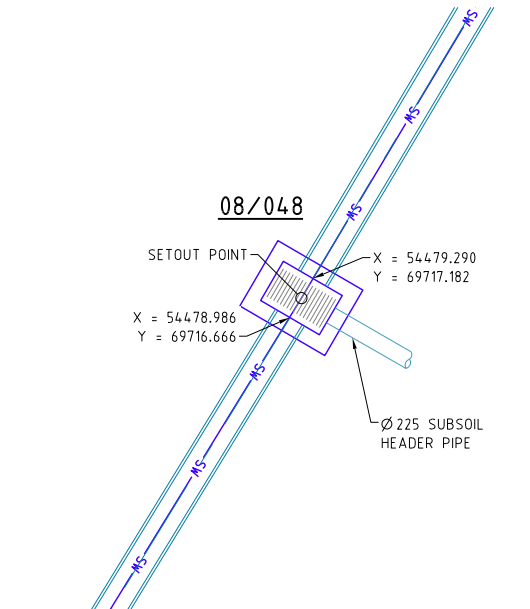
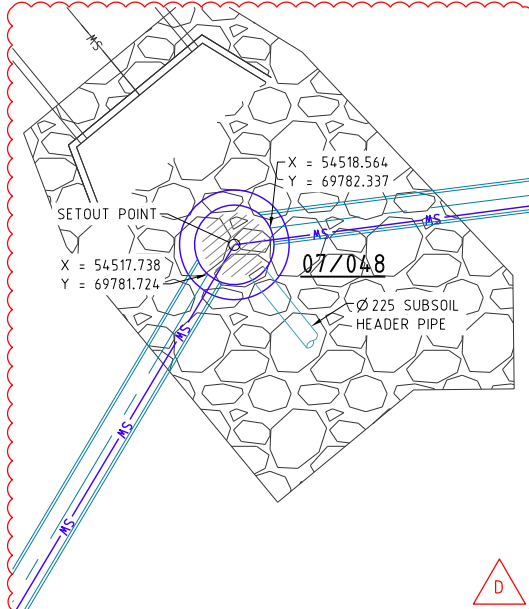
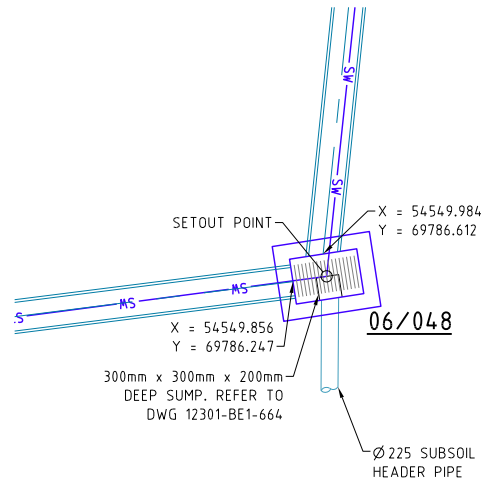
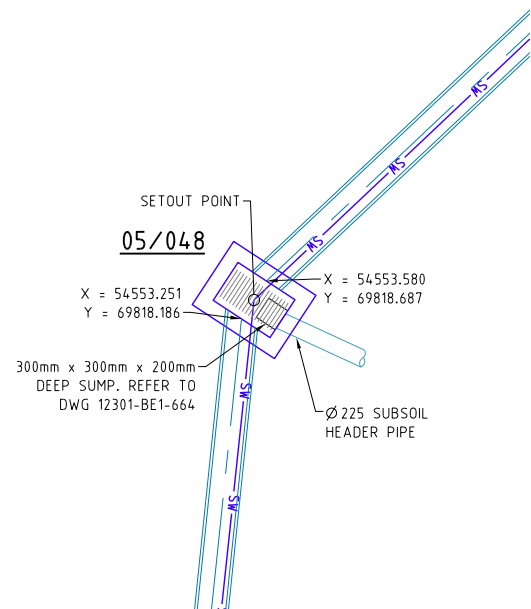
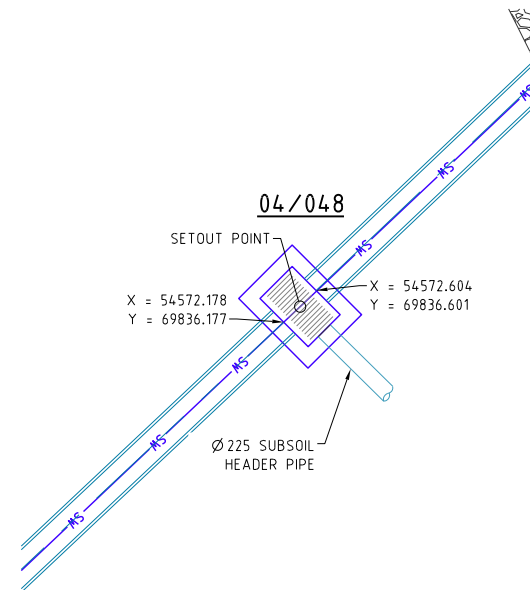
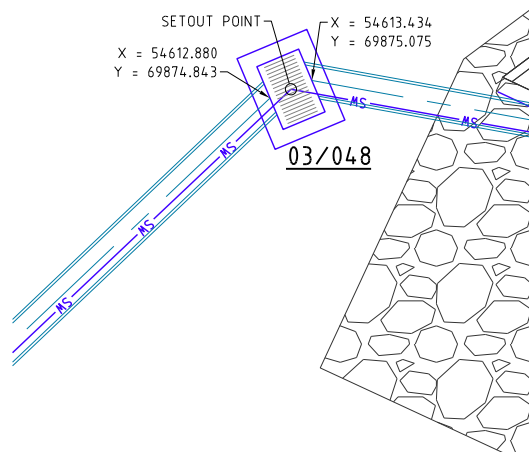
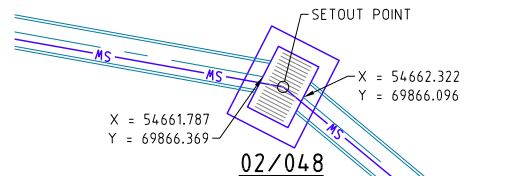
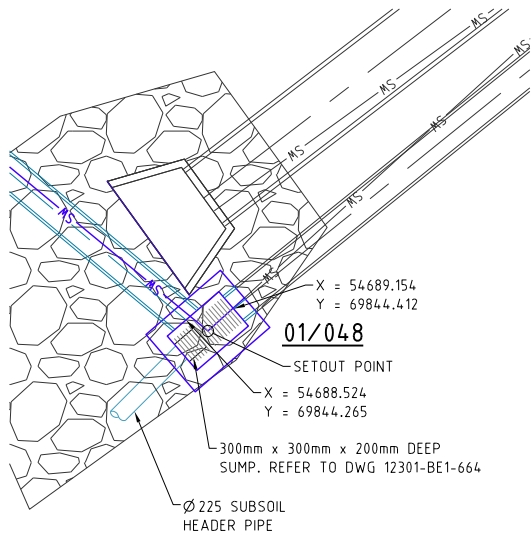
Project Coordination

MUS Pty Ltd T/As: Mortons-Urban Solutions ABN: 39 116 375 065 mortons@urbansolutions.net.au www.urbansolutions.net.au Tel 07 5571 1099 Fax 07 5571 1088

Postal Address PO Box 2484 Southport QLD 4215

Gold Coast Office Suite 9, 19 Short St Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED [Signature]	NER 2953710
DRAWING NUMBER	
12301-BE1-623	
AMEND.	
B	



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701

PARISH OF CUDGEN .

COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 0.5 1.0 1.5 2.0 2.5m

Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

D	21-10-20	PIT AMENDED
C	12-08-20	PIT DETAILS ADDED
B	16-08-19	PIT DETAILS AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

DRAWING TITLE

STORMWATER TYPICAL DETAILS AND PIT DETAILS SHEET 2 OF 3

CONSTRUCTION ISSUE

Urban & Regional Planning
Civil Engineering
Project Coordination

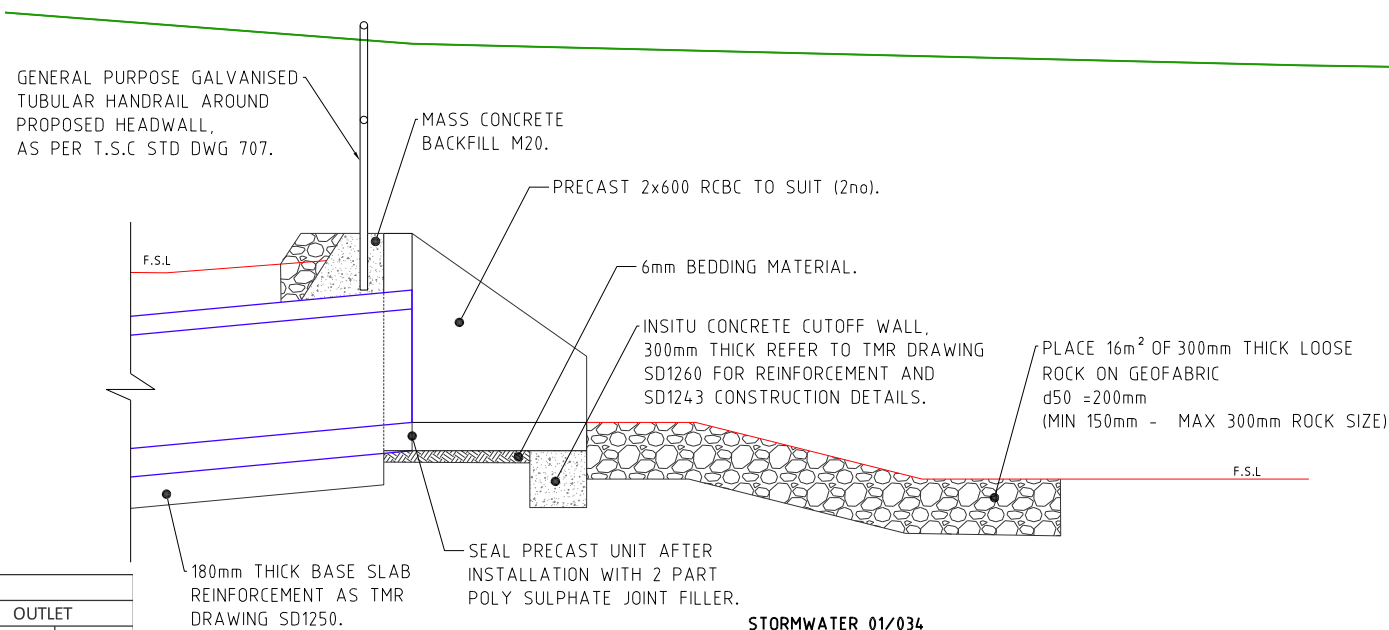
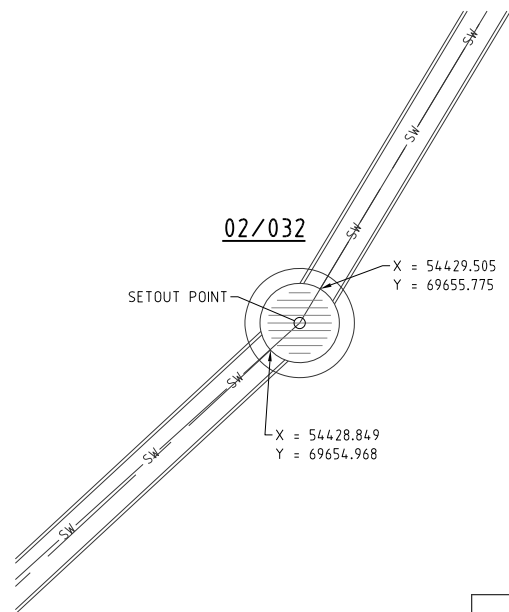
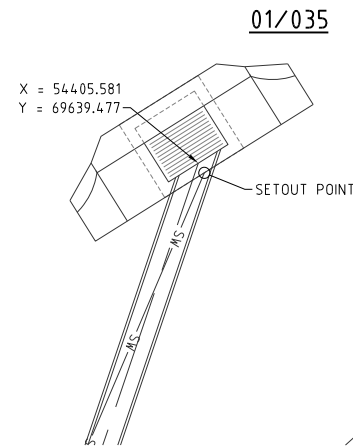
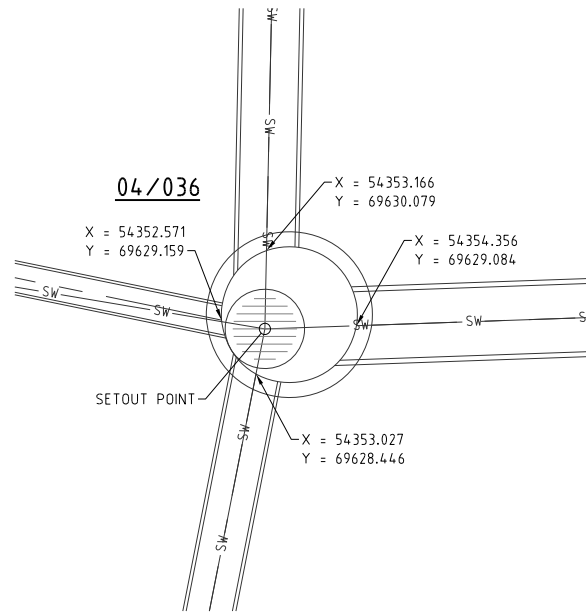
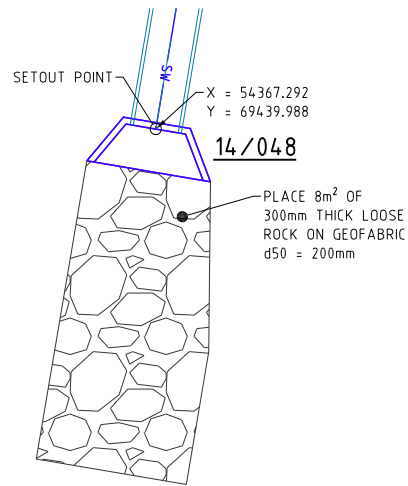
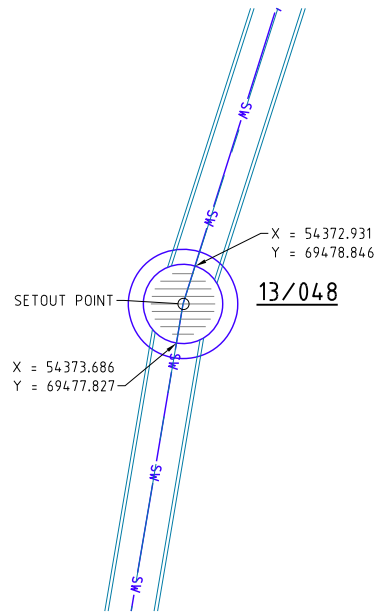
MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

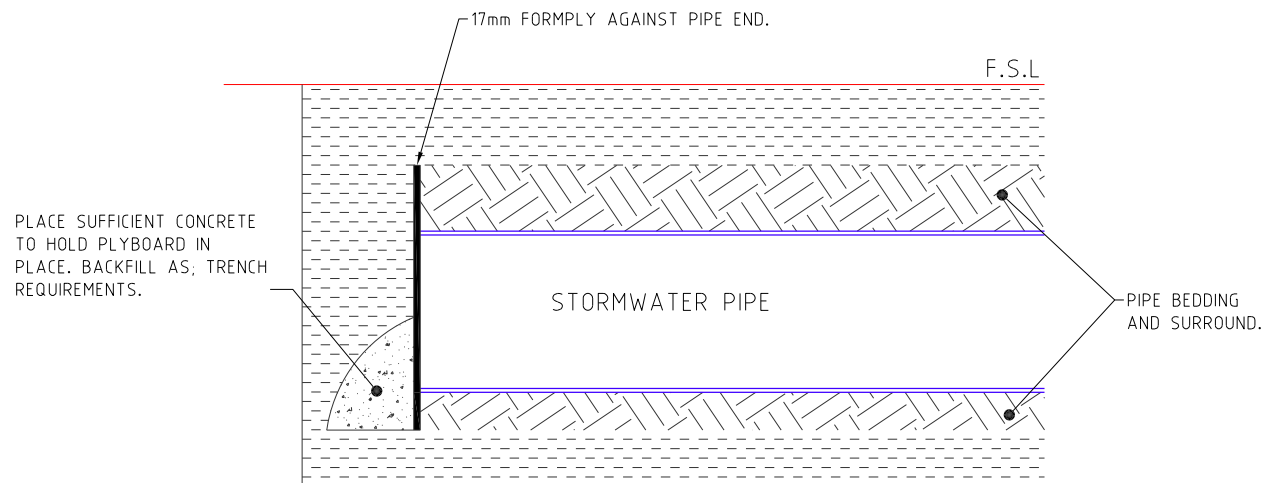
DESIGNED	RB	DRAWN	CB
APPROVED		NER 2953710	DATE 27-11-18
DRAWING NUMBER			AMEND.

12301-BE1-641

D



STORMWATER 01/034
RCBC DETAIL
SCALE 1:20



STORMWATER STUB/ BLANK
END DETAIL
SCALE 1:20

STORMWATER STRUCTURE TABLE					
Pit No.	PIT TYPE	INLET		OUTLET	
		Dia.	Invert	Dia.	Invert
01/034	Headwall			2x1200x600	3.00
05/036	Custom Manhole	900	2.035		
05/037	Custom Manhole	450	2.035		
05/038	Custom Manhole	375	2.53		
06/036	1800 Dia Manhole	300	1.929		
06/036	1800 Dia Manhole			600x600	2.70
06/036	1800 Dia Manhole			900	1.90
07/036	Headwall			600x600	3.00
01/046	1200 Dia Manhole	900	1.858	900	1.83
02/046	Headwall			900	1.80
04/046	Headwall	(2x) 900x300	2.25		
05/046	Headwall			(2x) 900x300	1.80
01/048	900x600 Grated Inlet pit	375	2.401	375	1.951
02/048	900x600 Grated Inlet pit	375	1.917	375	1.887
03/048	900x600 Grated Inlet pit	375	1.837	375	1.807
04/048	900x600 Grated Inlet pit	375	1.751	375	1.721
05/048	900x600 Grated Inlet pit	375	1.695	375	1.665
06/048	900x600 Grated Inlet pit	375	1.632	375	1.602
07/048	900x600 Grated Inlet pit	375	1.570	375	1.540
08/048	900x600 Grated Inlet pit	375	1.464	375	1.434
09/048	900x600 Grated Inlet pit	375	1.356	375	1.326
10/048	900x600 Grated Inlet pit	375	1.271	375	1.241
11/048	900x600 Grated Inlet pit	375	1.178	600	1.148
12/048	900x600 Grated Inlet pit	600	1.104	600	1.097
13/048	1050 Manhole	600	1.069	600	1.039
14/048	Headwall			600	1.00

PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701

PARISH OF CUDGEN .

COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

00.20.40.60.81.0

Scale 1:20 - A1 (1:40 - A3)

00.51.01.52.02.5

Scale 1:50 - A1 (1:100 - A3)

ISSUES

DATE

TENDER

13-11-19

COUNCIL

XX-XX-XX

CONSTRUCTION

XX-XX-XX

A

12-08-20

PRIVATE CERTIFIER

PRE

DATE

AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

JWA

Ecological Consultants

DRAWING TITLE

STORMWATER TYPICAL DETAILS AND PIT DETAILS SHEET 3 OF 3

CONSTRUCTION ISSUE

MORTONS urbansolutions

Urban & Regional Planning

Civil Engineering

Project Coordination

MUS Pty Ltd T/As: Mortons-Urban Solutions PO Box 2484 Southport QLD 4215

ABN 39 116 375 065

mortons@urbansolutions.net.au

www.urbansolutions.net.au

Tel 07 5571 1099

Fax 07 5571 1088

Postal Address

Suite 9, 19 Short St Southport QLD 4215

Gold Coast Office

DESIGNED RB

DRAWN CB

APPROVED

NER 2953710

DATE 27-11-18

DRAWING NUMBER

12301-BE1-642

AMEND.

A



- | SCHEDULE OF CONCRETE PAVEMENTS | | | | | |
|--------------------------------|-----------------------|--------------------------|---------------|----------|-------------|
| FUNCTION | SURFACING | SUBBASE PREPARATION | THICKNESS 'T' | STRENGTH | REINFORCING |
| DRIVEWAY
STORMWATER BASIN | HEAVY
BROOM FINISH | 100mm DBG20 (MIN CBR 15) | 180mm | 32 mPa | SL 82 MESH |

SAW CUT 35mm DEEP

JOINT TO BE FILLED WITH APPROVED HOT MELT FILLER OR ELASTIC SEALANT

F82 MESH (50 TOP COVER)

INDUCED CRACK

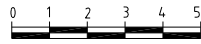
180

150mm COMPACTED SUB-BASE COURSE GRAVEL

CUT OUT EVERY SECOND JOINT IN MESH AT JOINT

CONTROL JOINT C.J.

SCALE 1:10 - A1 (1:20 - A3)

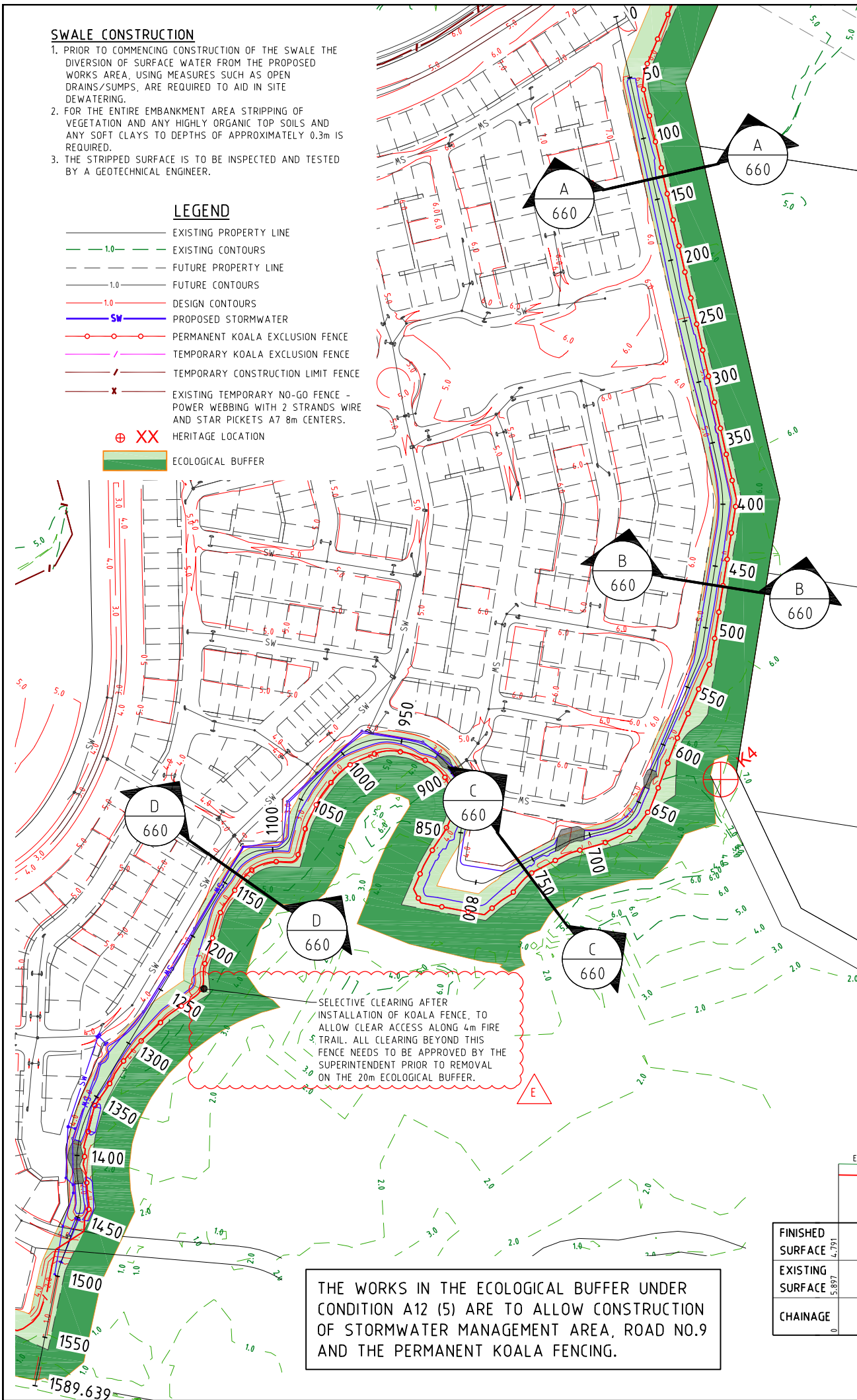
PROJECT NAME KINGS FOREST		
BECC - CONTRACT 1 REAL PROPERTY DESCRIPTION Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701 PARISH OF CUDGEN . COUNTY OF ROUS .		
CLIENT PROJECT 28 PTY LTD		
  Scale 1:100 - A1 (1:200 - A3)		
ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	
C	12-08-20	STORM CHAINAGES, NOTE AND LEGEND AMENDED
B	16-08-19	STORMWATER AND TABLE AMENDED
A	29-01-19	PRIVATE CERTIFIER
PRE DATE	AMENDMENT	
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ASSOCIATED CONSULTANTS		
  		
DRAWING TITLE		
STORMWATER CULVERT & CONCRETE ACCESS PATH SHEET 1		
CONSTRUCTION ISSUE		
 MORTONS urban solutions Urban & Regional Planning Civil Engineering Project Coordination		
MUS Pty Ltd T/As: Mortons-Urban Solutions ABN 39 116 375 065 mortons@urbansolutions.net.au www.urbansolutions.net.au Tel 07 5571 1099 Fax 07 5571 1088		Postal Address PO Box 2484 Southport QLD 4215 Gold Coast Office Suite 9, 19 Short St Southport QLD 4215
DESIGNED RB	DRAWN CB	
APPROVED 	NER 2953710	DATE 27-11-18
DRAWING NUMBER		AMEND.
12301-BE1-650		B

SWALE CONSTRUCTION

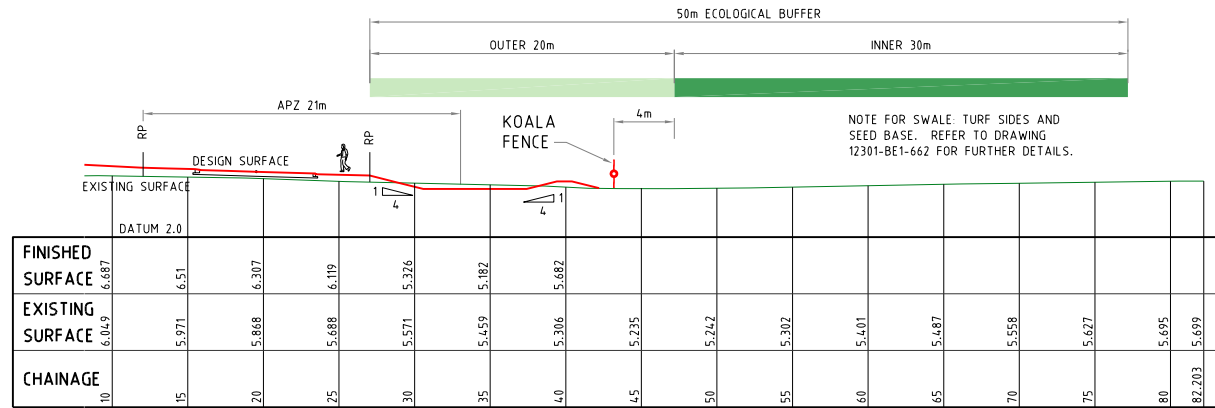
1. PRIOR TO COMMENCING CONSTRUCTION OF THE SWALE THE DIVERSION OF SURFACE WATER FROM THE PROPOSED WORKS AREA, USING MEASURES SUCH AS OPEN DRAINS/SUMPS, ARE REQUIRED TO AID IN SITE DEWATERING.
2. FOR THE ENTIRE EMBANKMENT AREA STRIPPING OF VEGETATION AND ANY HIGHLY ORGANIC TOP SOILS AND ANY SOFT CLAYS TO DEPTHS OF APPROXIMATELY 0.3m IS REQUIRED.
3. THE STRIPPED SURFACE IS TO BE INSPECTED AND TESTED BY A GEOTECHNICAL ENGINEER.

LEGEND

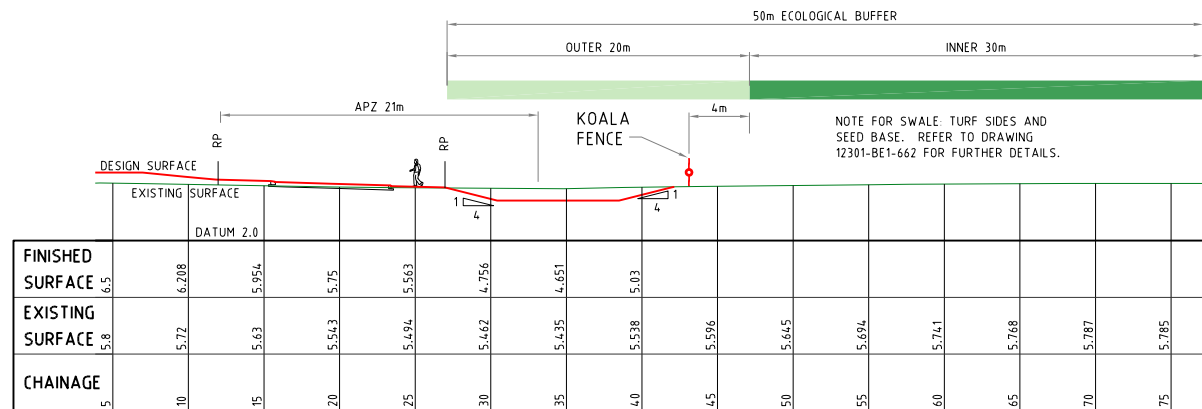
- EXISTING PROPERTY LINE
- EXISTING CONTOURS
- FUTURE PROPERTY LINE
- FUTURE CONTOURS
- DESIGN CONTOURS
- PROPOSED STORMWATER
- PERMANENT KOALA EXCLUSION FENCE
- TEMPORARY KOALA EXCLUSION FENCE
- TEMPORARY CONSTRUCTION LIMIT FENCE
- EXISTING TEMPORARY NO-GO FENCE - POWER WEBBING WITH 2 STRANDS WIRE AND STAR PICKETS AT 8m CENTERS.
- HERITAGE LOCATION
- ECOLOGICAL BUFFER



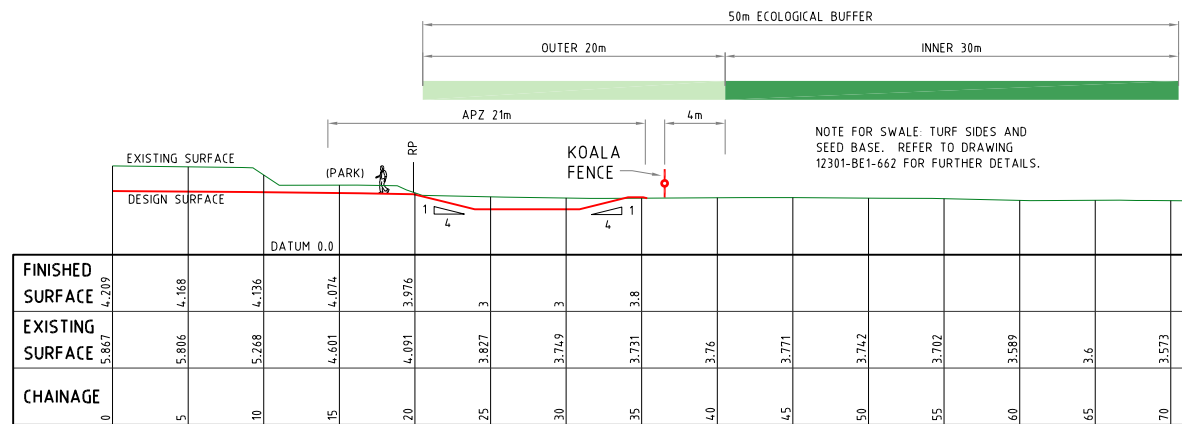
THE WORKS IN THE ECOLOGICAL BUFFER UNDER CONDITION A12 (5) ARE TO ALLOW CONSTRUCTION OF STORMWATER MANAGEMENT AREA, ROAD NO.9 AND THE PERMANENT KOALA FENCING.



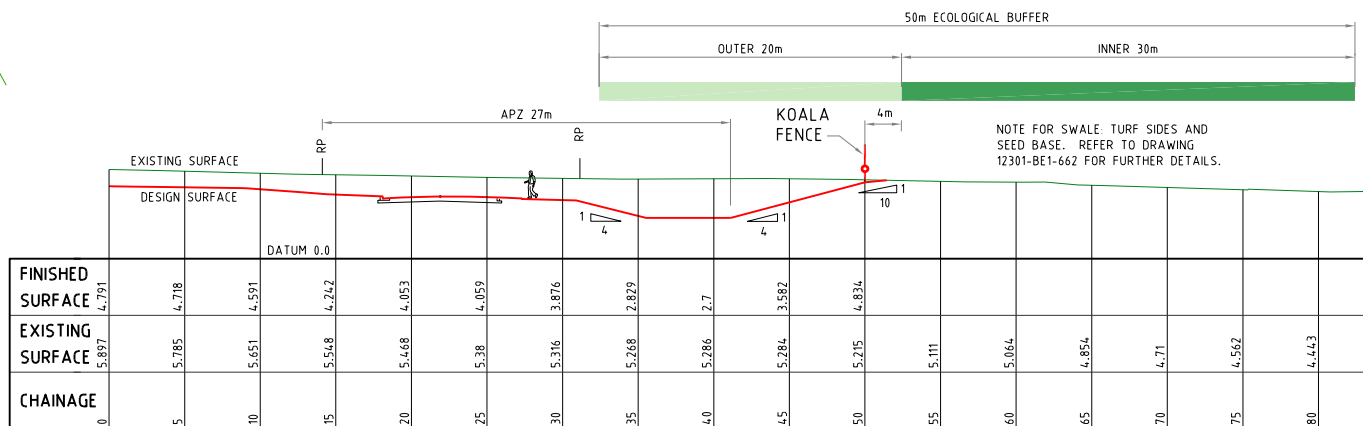
SECTION A
SCALE 1:250



SECTION B
SCALE 1:250



SECTION C
SCALE 1:250



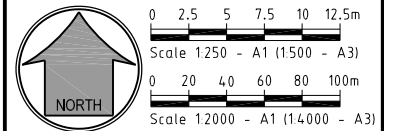
SECTION D
SCALE 1:250

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTRY OF ROUS .

CLIENT PROJECT 28 PTY LTD



ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

E	25-06-20	NOTE ADDED
D	02-06-20	GRADE AND NOTES AMENDED
C	30-03-20	NOTE AMENDED
B	16-08-19	SECTIONS AND DESIGN CONTOURS AMENDED
A	29-01-19	PRIVATE CERTIFIER

PRE DATE	AMENDMENT

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ASSOCIATED CONSULTANTS



DRAWING TITLE

STORMWATER SWALE PLAN

CONSTRUCTION ISSUE

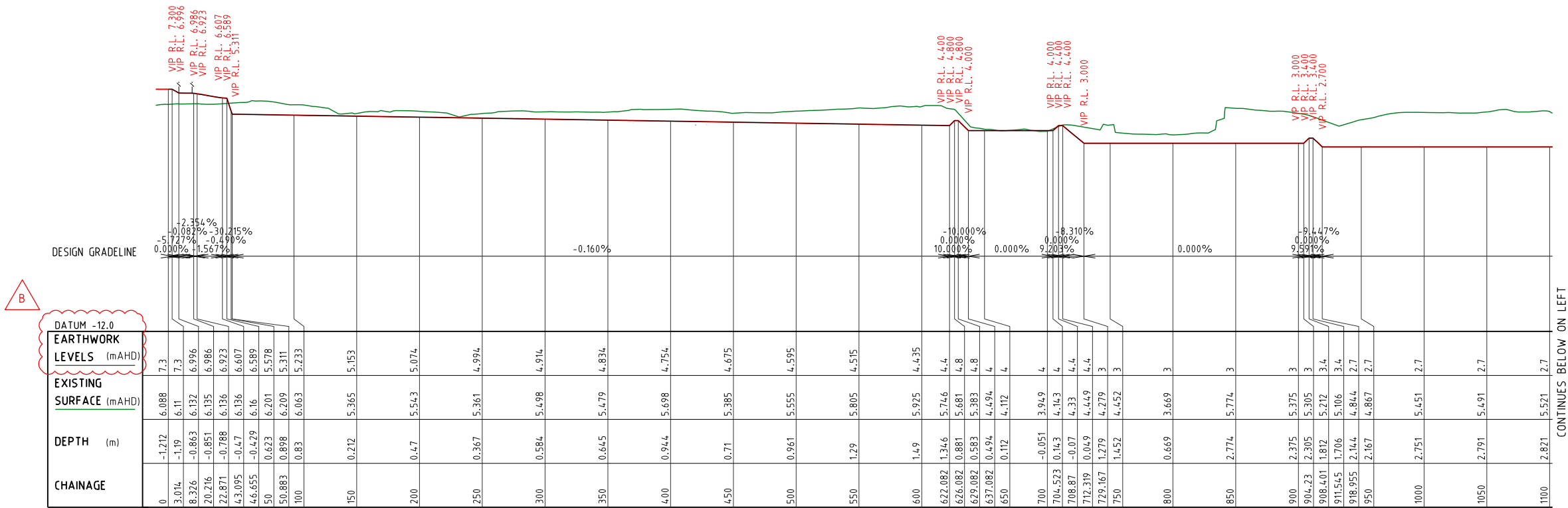


MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

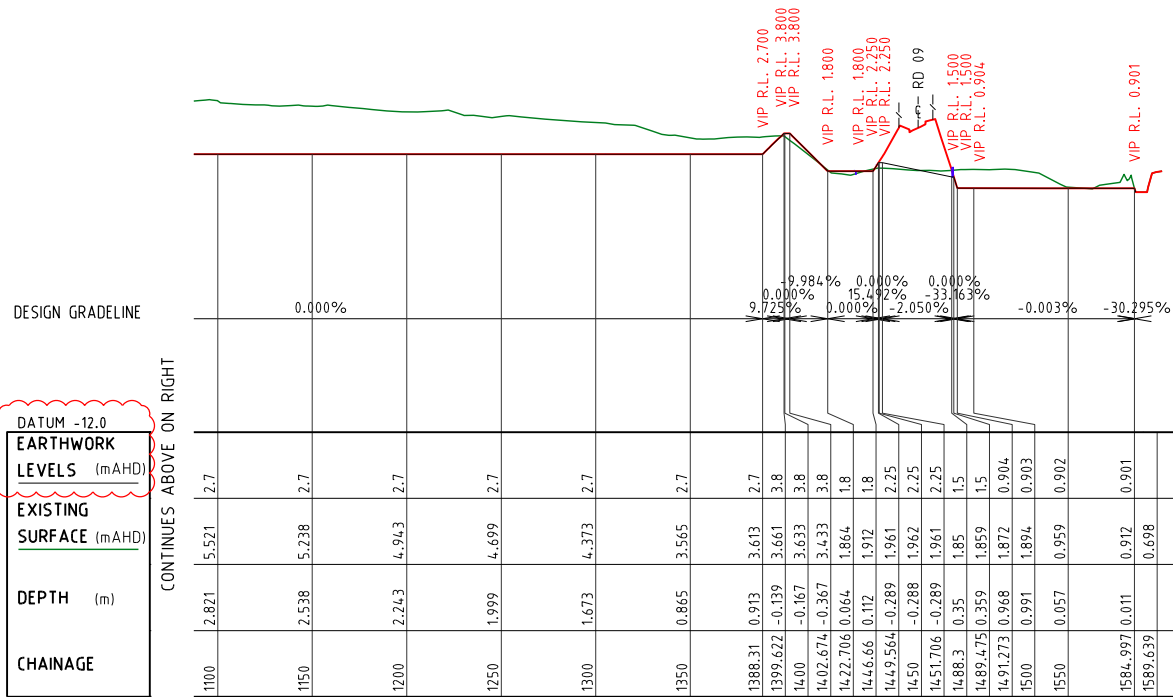
Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED [Signature]	NER 2953710 DATE 27-11-18
DRAWING NUMBER	AMEND.
12301-BE1-660	E



LONGITUDINAL SECTION ROAD EAST SWALE



LONGITUDINAL SECTION ROAD EAST SWALE

PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701

PARISH OF CUDGEN .

COUNTY OF ROUS .

CLIENT

PROJECT 28

PTY LTD

NORTH

05102025

Scale 1500 - A1 (1:1000 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	XX-XX-XX
CONSTRUCTION	XX-XX-XX

PRE	DATE	AMENDMENT
B	16-08-19	LEGEND AMENDED
A	29-01-19	PRIVATE CERTIFIER

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LANDSURV

GILBERT SUTHERLAND

JWA Ecological Consultants

DRAWING TITLE

STORMWATER SWALE LONGITUDINAL SECTION

CONSTRUCTION ISSUE

MORTONS

urbansolutions

Urban & Regional Planning

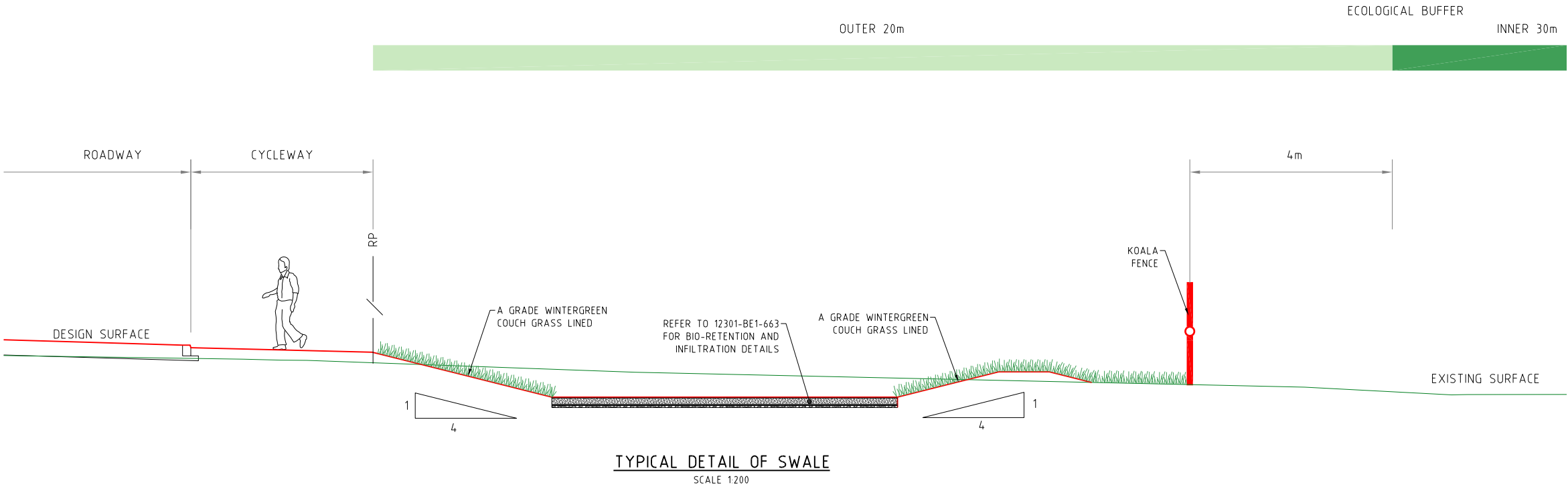
Civil Engineering

Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 2953710	DATE 27-11-18
DRAWING NUMBER			AMEND.
12301-BE1-661			B



PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701

PARISH OF CUDGEN .

COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0

2

4

6

8

10m

Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

D	12-08-20	NOTES AND DETAILS AMENDED
C	03-06-20	DIMENSION AMENDED
B	07-04-20	DETAILS AMENDED
A	16-08-19	PRIVATE CERTIFIER

PRE DATE	AMENDMENT
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LANDSURV

GILBERT SUTHERLAND

JWA

Ecological Consultants

DRAWING TITLE

STORMWATER SWALE TYPICAL DETAILS

CONSTRUCTION ISSUE

MORTONS

urbansolutions

Urban & Regional Planning

Civil Engineering

Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 2953710	DATE 27-11-18

DRAWING NUMBER	AMEND.
12301-BE1-662	D

1. PRIOR TO COMMENCING CONSTRUCTION OF THE SWALE THE DIVERSION OF SURFACE WATER FROM THE PROPOSED WORKS AREA, USING MEASURES SUCH AS OPEN DRAINS/SUMPS, ARE REQUIRED TO AID IN SITE Dewatering.
2. FOR THE ENTIRE EMBANKMENT AREA STRIPPING OF VEGETATION AND ANY HIGHLY ORGANIC TOP SOILS AND ANY SOFT CLAYS TO DEPTHS OF APPROXIMATELY 0.3m IS REQUIRED.
3. THE STRIPPED SURFACE IS TO BE INSPECTED AND TESTED BY A GEOTECHNICAL ENGINEER.

	EXISTING PROPERTY LINE
	FUTURE PROPERTY LINE
	BOUNDARY OF CATCHMENT
	PROPOSED STORMWATER
	PERMANENT KOALA EXCLUSION FENCE
	TEMPORARY KOALA EXCLUSION FENCE
	TEMPORARY CONSTRUCTION LIMIT FENCE
	EXISTING TEMPORARY NO-GO FENCE - POWER WEBBING WITH 2 STRANDS WIRE AND STAR PICKETS AT 8m CENTERS.
	HERITAGE LOCATION
	ECOLOGICAL BUFFER
	TREATMENT AREAS
	TYPE 1 SATURATED BIO-RETENTION SWALE
	TYPE 2 FREE DRAINING BIO-RETENTION SWALE

B

THESE WORKS ARE NOT APART OF INITIAL CONTRACT. BIO-RETENTION
WORKS TO BE CONSTRUCTED FOLLOWING CONFIRMATION THAT 80% OF
THE CATCHMENT CONSTRUCTION HAS OCCURRED.

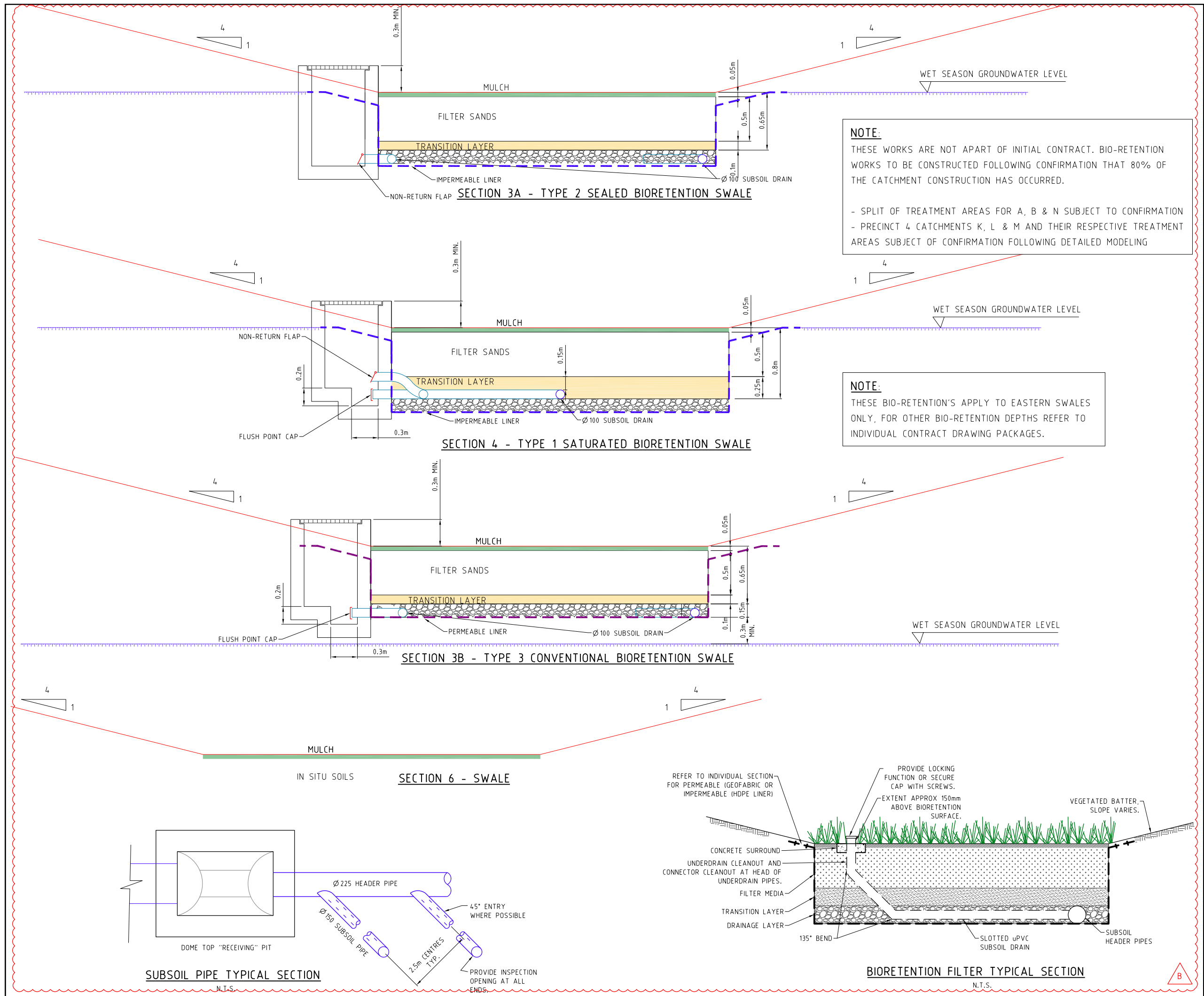
- SPLIT OF TREATMENT AREAS FOR A, B & N SUBJECT TO CONFIRMATION
- PRECINCT 4 CATCHMENTS K, L & M AND THEIR RESPECTIVE TREATMENT AREAS SUBJECT OF CONFIRMATION FOLLOWING DETAILED MODELING

REFER TO DRAWING
12301-BE2-603 FOR DETAILS
OF REINFORCED TURF CELL.

THE WORKS IN THE ECOLOGICAL BUFFER UNDER
CONDITION A12 (5) ARE TO ALLOW CONSTRUCTION
OF STORMWATER MANAGEMENT AREA, ROAD NO.9
AND THE PERMANENT KOALA FENCING.

DRAWING NUMBER	AMEND.
12301-BE1-663	B

Y:\123 - Lela Developments Pty Ltd\01 - Kings Forest\BULK EARTHWORKS\BE\Current\12301-BE-1483.dwg, 21/10/2020 10:16:38 AM, 1:2



PROJECT NAME
KINGS FOREST

BECC - CONTRACT 1
REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 0.2 0.4 0.6 0.8 1.0m
Scale 1:20 - A1 (1:40 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

B	09-10-20	SECTIONS AMENDED
A	17-09-20	PRIVATE CERTIFIER
PRE DATE	AMENDMENT	

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DRAWING TITLE

STORMWATER SWALE TYPE DETAILS

CONSTRUCTION ISSUE

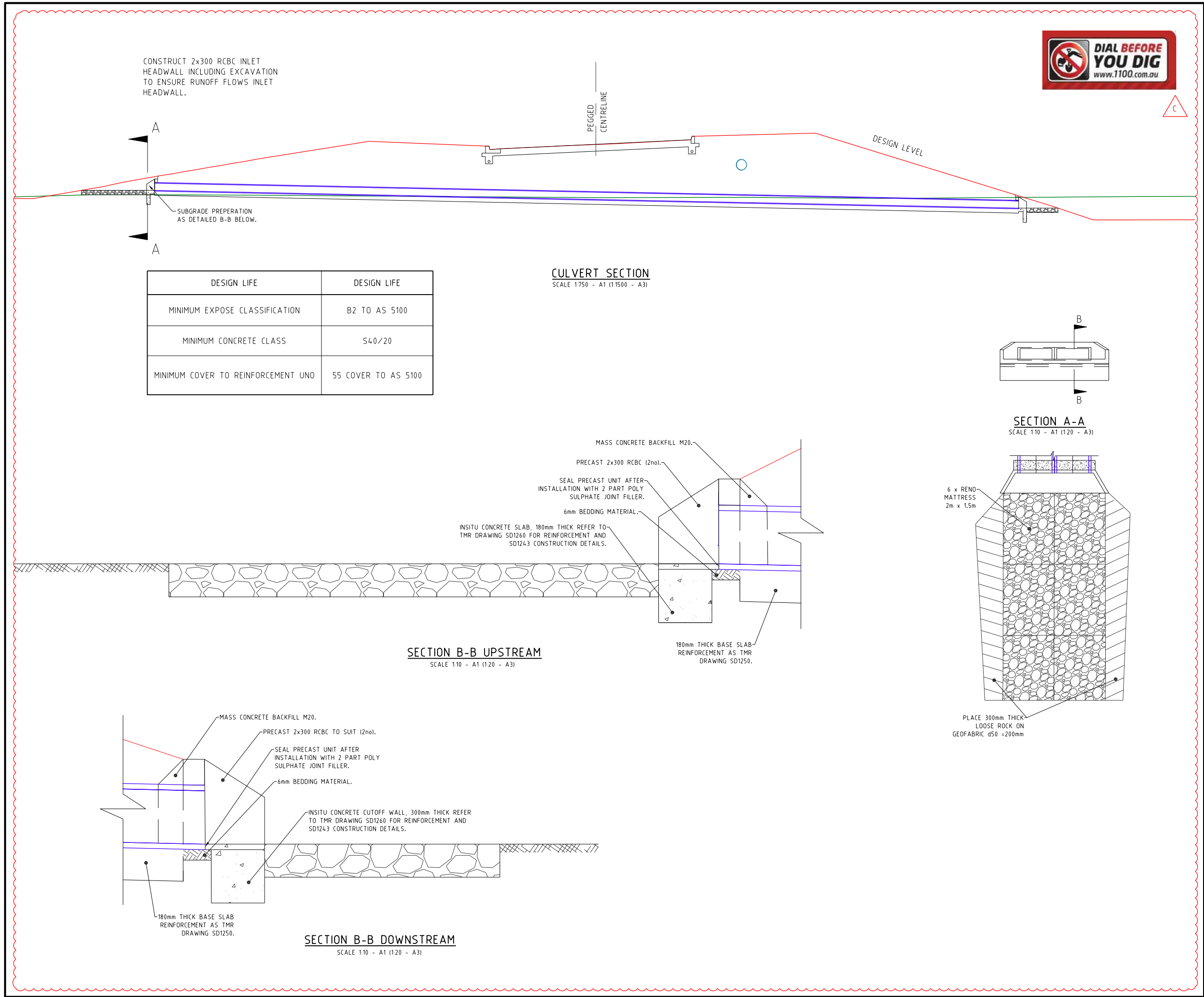
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED [Signature]	NER 2953710 DATE 27-11-18
DRAWING NUMBER 12301-BE1-664	
AMEND. B	



PROJECT NAME
KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 0.1 0.2 0.3 0.4 0.5m
Scale 1:10 - A1 (1:20 - A3)

0 0.2 0.4 0.6 0.8 1.0m
Scale 1:20 - A1 (1:40 - A3)

0 7.5 15 22.5 30 37.5m
Scale 1:750 - A1 (1:1500 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

PRE	DATE	AMENDMENT
C	12-08-20	DETAILS AND NOTES AMENDED
B	16-08-19	STORMWATER DETAILS AMENDED
A	29-01-19	PRIVATE CERTIFIER

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LANDSURV

GILBERT SUTHERLAND

JWA Ecological Consultants

DRAWING TITLE

TYPICAL CULVERT SECTIONS

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

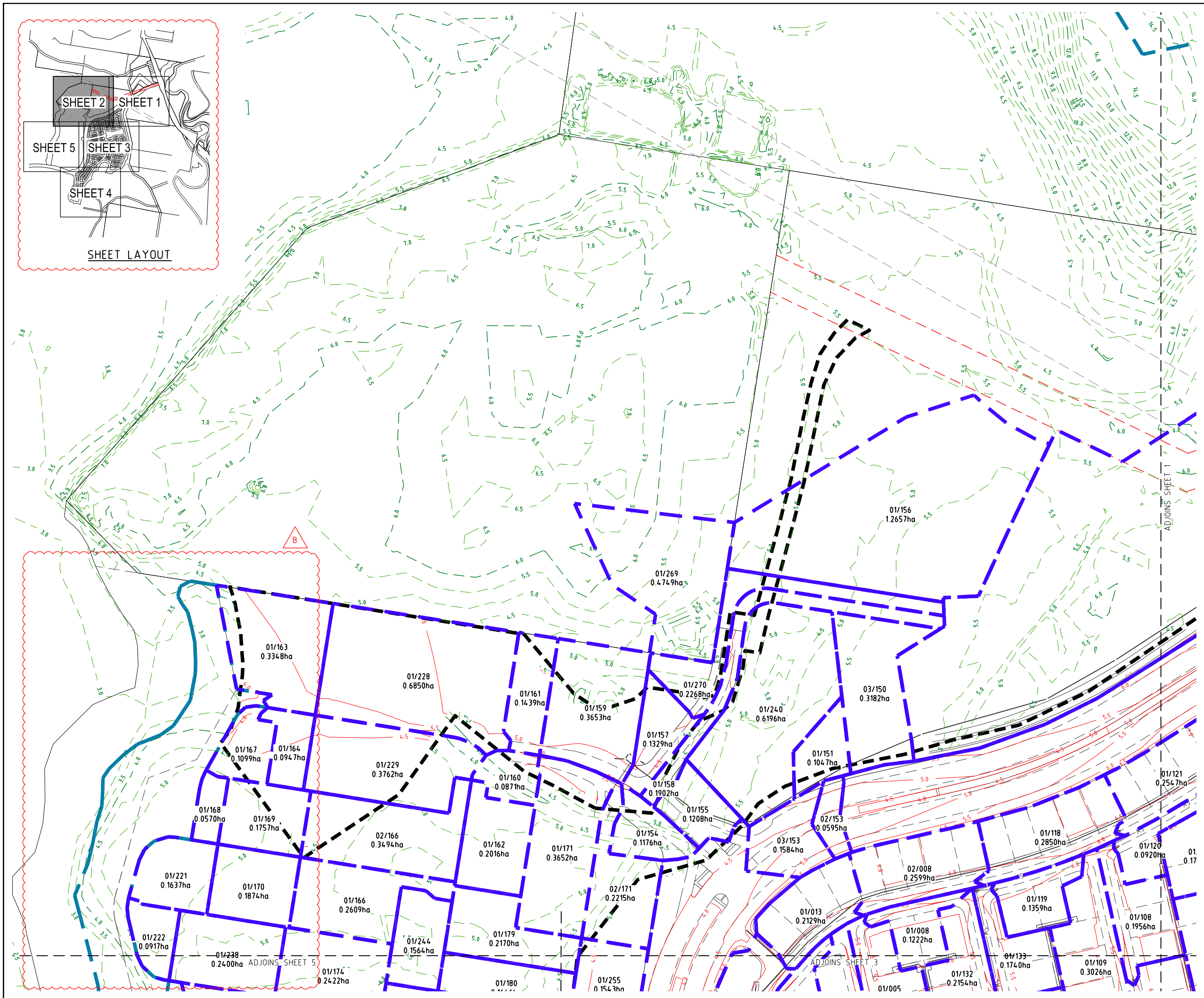
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Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

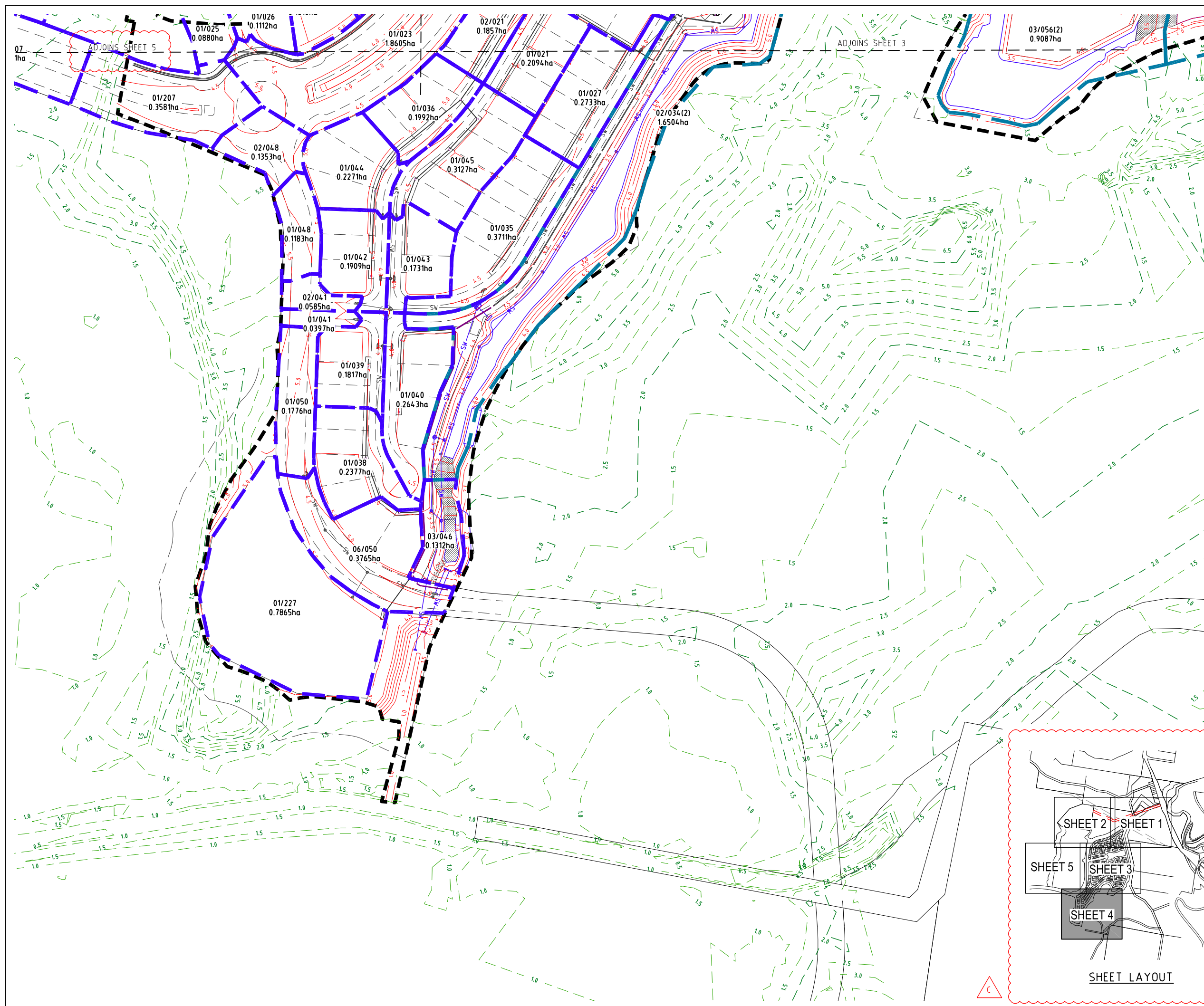
DESIGNED	RB	DRAWN	CB
APPROVED	<i>[Signature]</i>	NER 2953710	DATE 27-11-18
DRAWING NUMBER			AMEND.
12301-BE1-665			C



P



DESIGNED	RB	DRAWN	CAB
APPROVED	<i>[Signature]</i>	NER 2953710	DATE 26-04-17
DRAWING NUMBER			AMEND
12301-BE1-671			B



PROJECT NAME

KINGS
FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION

Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP131727, Lot 38A on DP131727,
Lot 38B on DP131727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28
PTY LTD



0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	xx-xx-xx	

C	05-03-20	SHEET LAYOUT AMENDED			
B	16-08-19	LIMIT OF WORKS AMENDED			
A	29-01-19	PRIVATE CERTIFIER			
PRE	DATE		AMENDMENT		

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D R A W I N G T I T L E

STORMWATER
CATCHMENT PLAN
SHEET 4

CONSTRUCTION ISSUE

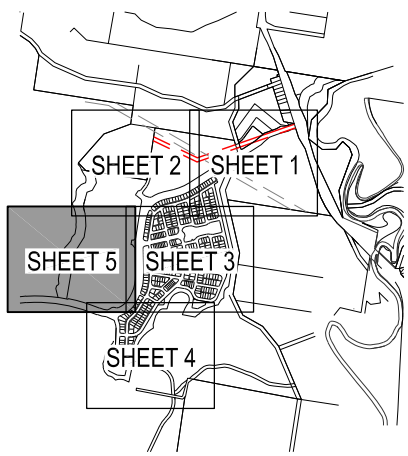
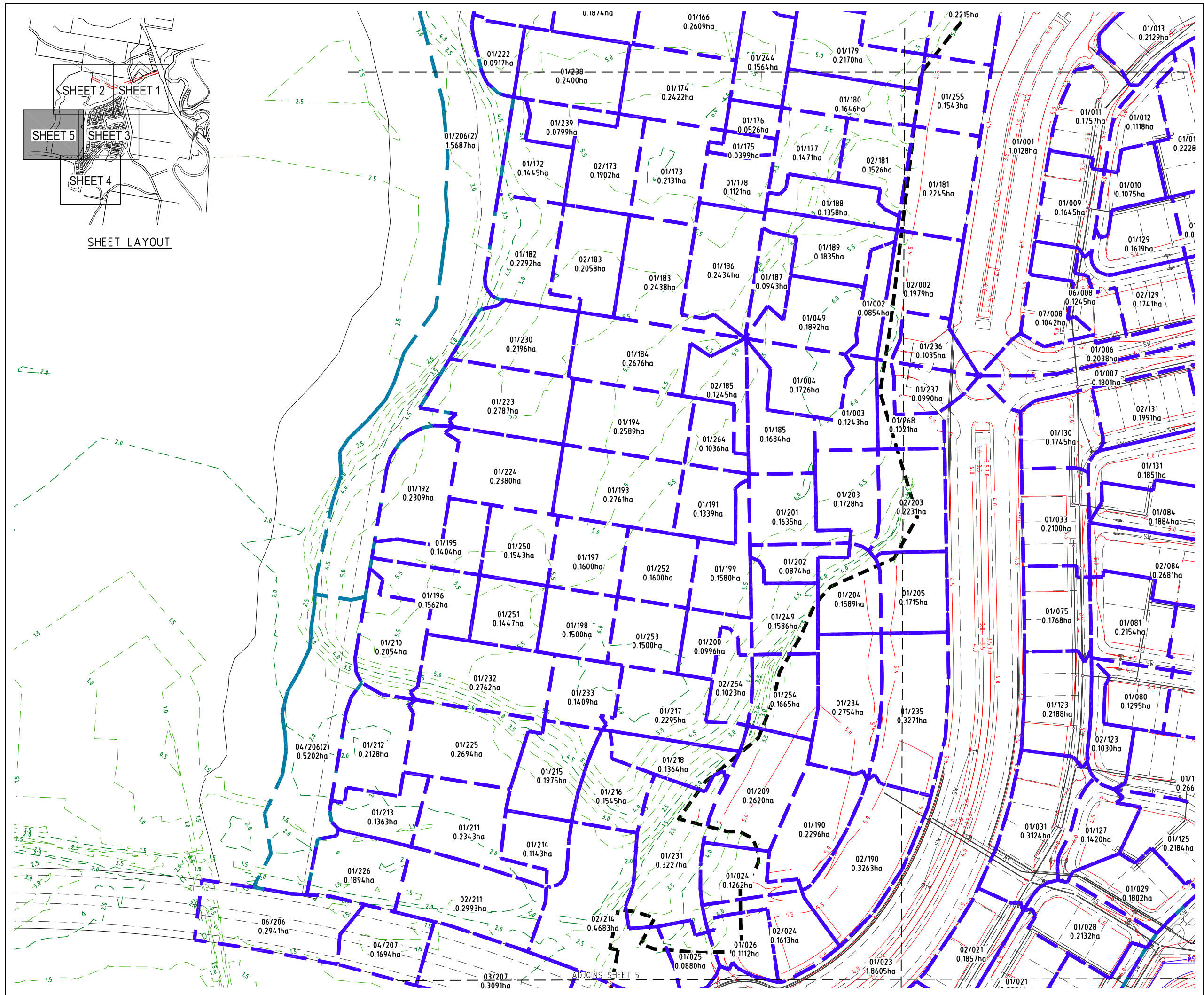


MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address:
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short Street
Southport QLD 4215

DESIGNED	RB	DRAWN	CAB
APPROVED	<i>[Signature]</i>	NER 2953710	DATE 26-04-
DRAWING NUMBER			AMEN
12301-BE1-673			C



SHEET LAYOUT

PROJECT NAME

KINGS FOREST

BECC - CONTRACT 1

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD



0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	XX-XX-XX	
CONSTRUCTION	XX-XX-XX	

A	29-01-19	PRIVATE CERTIFIER
PRE DATE		AMENDMENT

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DRAWING TITLE

STORMWATER CATCHMENT PLAN SHEET 5

CONSTRUCTION ISSUE



MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CAB	
APPROVED RB	NER 2953710	DATE 26-04-17
DRAWING NUMBER		AMEND.
12301-BE1-674		A

0.2 ARI (Q5) MINOR FLOW - 12D DYNAMIC DRAINAGE RESULTS		REFER TO IFD TABLE FOR MAXIMUM INTENSITY DURING STORM																																
NOTE: NEGATIVE FLOW VALUES INDICATE REVERSE FLOWS		CATCHMENT AREA			RAINFALL VOLUME *		RAINFALL Coef.		CATCHMENT FLOW			APPROACH FLOW			FLOW AT PIT			PIT		HGL			PIPE		HEADLOSSES		CAPACITY	VELOCITY	NODE					
NODE		A1	A2	A3	CRITICAL	INTENSITY	10 YR	CURRENT	A1	A2	A3	CRITICAL	GRADE	L/S	FLOW	DXV	L/S	L/S	BYPASS	NODE	GRADE	GRATE	PIT	U/S PIPE	D/S PIPE	GRADE				PIPE	COEFFICIENT	HEADLOSS		
FROM:	TO:	HA	HA	HA	STORM	MMHR		Storm	HA	HA	HA	ARI MIN.	%		WIDTH						%	RL	RL	U/S RL	D/S RL	%	M3/S	Ku	Kw	Ku	Kw	RATIO	M/S	
01/32	02/32											25		0			0					4.399	3.54	3.54	3.40	0.20	0.07	0.3	0.0	0.0	0.0	1.32	0.66	01/32
02/32	05/36											25		0			0					4.141	3.40	3.40	3.40	0.00	0.14	2.1	0.0	0.1	0.0	1.58	0.9	02/32
05/36	06/36											25		0			0					4.035	3.40											05/36
01/34	02/34											25	2.1	0			0				2.125	3.700	3.40	3.40	3.40	0.00	0.83	0.0	0.0	0.0	0.0			01/34
02/34	03/34		1.650							0.750		25		759			759					3.800	3.40	3.40	3.40	0.00	1.82	0.0	0.0	0.0	0.0			02/34
03/34	04/34											25		0			0					3.800	3.40	3.40	3.29	1.97	1.82	0.0	0.0	0.0	0.0			03/34
01/35	05/36	0.371			25	43.0	0.819	0.801	0.169			25		171	1.68	0.01	156	6	0.02	02/34		3.929	3.83	3.63	3.40	2.43	0.16	9.7	0.0	0.2	0.0	0.5	2.31	01/35
05/36	06/36											25		0			0					4.035	3.40											05/36
01/36	02/36	0.199			25	43.0	0.819	0.801	0.091			25		91	1.10	0.02	81	8	0.02	01/44		4.328	3.88	3.77	3.75	0.07	0.08	9.7	0.0	0.2	0.0	0.21	0.97	01/36
02/36	03/36											25		0			0					4.234	3.75	3.69	3.61	0.22	0.28	1.5	0.0	0.1	0.0	0.52	1.23	02/36
03/36	04/36											25		0			0					4.070	3.61	3.60	3.55	0.32	0.48	0.5	0.0	0.0	0.0	0.61	1.08	03/36
04/36	05/36											25		0			0					4.401	3.55	3.45	3.40	0.11	0.82	1.8	0.0	0.1	0.0	1.02	1.28	04/36
05/36	06/36											25		0			0					4.035	3.40	3.37	3.11	0.33	0.11	1.4	0.0	0.1	0.0	3.45	1.55	05/36
06/36	07/36											25	1.1	0			0				1.121	4.579	3.11	3.11	3.40	-5.13	-1.28	0.0	0.0	0.0	0.0	-0.7	5.47	06/36
07/36	02/34											25	1.2	0			0				1.167	3.800	3.40	3.40	3.40	0.00	-1.28	0.0	0.0	0.0	0.0			07/36
02/34	03/34		1.650							0.750		25		759			759					3.800	3.40											02/34
02/34	03/34		1.650							0.750		25		759			759					3.800	3.40	3.40	2.50	32.18	0.03	0.0	0.0	0.0	0.0	2.11	3.73	02/34
01/37												25		0			0					2.700	2.50											01/37
01/46	02/46											25	10.3	0			0				10.252	4.105	2.89	2.61	2.50	1.43	1.34	1.2	0.0	0.3	0.0	2.34	2.25	01/46
02/46	03/46											25		0			0					3.000	2.50	2.50	2.50	0.00	1.34	0.0	0.0	0.0	0.0			02/46
03/46	04/46	0.131			25	43.0	0.819	0.801	0.060			25		60			60					2.800	2.50	2.50	2.50	0.00	1.50	0.0	0.0	0.0	0.0			03/46
04/46	05/46											25		0			0					2.915	2.50	2.55	1.80	2.05	1.50	0.0	0.0	0.0	0.0	1.08	3.32	04/46
05/46	06/46											25		0			0					2.165	1.75	1.75	1.25	0.52	1.50	0.0	0.0	0.0	0.0	0.27	1.88	05/46
06/46												25		0			0					1.500	1.25											06/46
03/46	04/46	0.131			25	43.0	0.819	0.801	0.060			25		60			60					2.800	2.50	2.50	1.60	35.65	0.03	0.0	0.0	0.0	0.0	2.12	3.93	03/46
01/47												25		0			0					1.800	1.60											01/47
09/59	10/59											25		0			0					4.934	3.69	3.69	3.68	0.07	0.16	0.0	0.0	0.0	0.0	0.3	3.84	09/59
01/48	02/48											25		0	0.00	0.00	0	0	0.00	02/34		3.600	3.68	3.64	3.61	0.10	0.15	1.9	0.0	0.1	0.0	2.63	1.32	01/48
02/48	03/48											25		0	0.00	0.00	0	0	0.00	02/34		3.100	3.61	3.60	3.57	0.07	0.14	0.4	0.0	0.0	0.0	2.56	1.28	02/48
03/48	04/48											25		0	0.00	0.00	0	0	0.00	06/48		3.200	3.57	3.57	3.51	0.10	0.14	1.0	0.0	0.1	0.0	2.5	1.27	03/48
04/48	05/48											25		0			0					3.100	3.51	3.51	3.48	0.12	0.14	0.2	0.0	0.0	0.0	2.43	1.22	04/48
05/48	06/48											25		0	0.00	0.00	0	0	0.00	02/34		3.200	3.48	3.48	3.45	0.10	0.13	0.7	0.0	0.0	0.0	2.3	1.23	05/48
06/48	07/48											25		0	0.00	0.00	0	0	0.00	02/34		3.100	3.45	3.44	3.43	0.04	0.13	1.7	0.0	0.1	0.0	2.26	1.22	06/48
07/48	08/48											25		0	0.00	0.00	0	0	0.00	02/34		3.200	3.43	3.42	3.40	0.03	0.12	1.0	0.0	0.1	0.0	2.2	1.19	07/48
08/48	09/48											25		0			0					3.100	3.40	3.40	3.37	0.03	0.11	0.2	0.0	0.0	0.0	2.05	1.13	08/48
09/48	10/48											25		0	0.00	0.00	0	0	0.00	02/34		3.100	3.37	3.37	3.35	0.03	0.09	0.2	0.0	0.0	0.0	1.65	0.89	09/48
10/48	11/48											25	4.4	0	0.00	0.00	0	0	0.00	02/34		3.100	3.35	3.35	3.33	0.03	0.05	0.3	0.0	0.0	0.0	0.97	0.49	10/48
11/48	12/48											25		0	0.00	0.00	0	0	0.00	02/34		3.100	3.33	3.26	2.61	1.50	0.75	0.2	0.0	0.1	0.0	3.87	2.65	11/48
12/48	13/48											25		0	0.00	0.00	0	0	0.00	03/46		2.300	2.61	2.52	2.10	1.51	0.75	0.3	0.0	0.1	0.0	3.86	2.65	12/48
13/48	14/48											25	0.5	0			0				0.500	4.034	2.10	2.02	1.55	1.23	0.75	0.2	0.0	0.1	0.0	3.86	3.44	13/48
14/48	18/281											25		0			0					1.900	1.27	1.27	1.10	0.17	0.75	0.0	0.0	0.0	0.0	0.06	1.01	14/48
18/281	19/281											25		0			0					1.000	0.15											18/281
01/49	03/220	0.189			25	43.0	0.819	0.801	0.086			25		86	0.55	0.03	78	6	0.03	01/2		4.155	3.29	3.24	3.25	-0.23	0.09	7.1	0.0	0.2	0.0	0.07	1.82	01/49
03/220	07/181											25		0			0					4.306	3.25											03/220
05/50	06/50											25		0			0					3.965	3.14	2.97	2.91	2.94	0.42	1.6	0.0	0.2	0.0	0.96	1.57	05/50
06/50	07/50	0.377			25	43.0	0.819	0.801	0.171			25		174	0.00	0.00	158	0	0.00	05/34		3.888	2.91	2.79	2.50	1.87	0.57	1.5	0.0	0.1	0.0	0.64	5.75	06/50
07/50	03/46											25		0			0					3.035	2.50	2.50	2.50	0.00	0.57	0.0	0.0	0.0	0.0			07/50
03/																																		

NOTES:

- THESE CALCULATIONS ARE BASED ON IISAX2 DYNAMIC DRAINAGE ANALYSIS USING 12D SOFTWARE ANALYSIS.
- INDIVIDUAL TIMES OF CONCENTRATION ARE GENERATED FOR EACH NODE AND CATCHMENT TYPE USING TEMPORAL PATTERNS DETERMINED FROM THE RELEVANT AUTHORITY.
- "TREAT" IN THE IFD TABLE REFERS TO 0.5x1 YEAR ARI, USED TO DETERMINE WATER QUALITY TREATMENT FLOWS.
- CATCHMENT 1 REFERS TO TYPICAL URBANISED CATCHMENTS WITH LOTS <1000m2. THE IMPERVIOUS PORTION OF THE CATCHMENT TIME OF CONCENTRATION (TC) IS TYPICALLY 5 MINUTES AND THE PERVIOUS PORTION OF THE CATCHMENT TYPICALLY HAS AN 8 MINUTE TC.
- CATCHMENT 2 IS TYPIC

0.01 ARI (Q100) Major FLOW - 1D DYNAMIC DRAINAGE RESULTS

* REFER TO IFD TABLE FOR MAXIMUM INTENSITY DURING STORM

NOTE: NEGATIVE FLOW VALUES INDICATE REVERSE FLOWS			CATCHMENT AREA			RAINFALL VOLUME*		RAINFALL Coef.		CATCHMENT FLOW			APPROACH FLOW				FLOW AT PIT				PIT		HGL				PIPE				HEADLOSSES				CAPACITY RATIO	VELOCITY M/S	NODE
FROM	TO	NODE TYPE	A1 HA	A2 HA	A3 HA	CRITICAL STORM	INTENSITY MMHR	10YR	CURRENT Storm	A1 HA	A2 HA	A3 HA	CRITICAL ARI MIN.	GRADE %	L/S	FLOW WIDTH	DxV	L/S	BYPASS	DxV	NODE	GRADE %	GRATE RL	PIT RL	PIPE U/S RL	D/S RL	GRADE %	PIPE FLOW M3/S	COEFFICIENT K _u	K _w	K _u	K _w					
01/32	02/32	MANHOLE 1050mm DIA											60		0			0					4.399	3.62	3.62	3.63	-0.01	0.07	0.2	0.0	0.0	0.0	1.23	0.62	01/32		
02/32	05/36	MANHOLE 1050mm DIA											60		0			0					4.141	3.63	3.63	3.63	0.00	0.13	1.8	0.0	0.0	0.0	1.4	0.79	02/32		
05/36	06/36	CUSTOM MANHOLE (STRUCTURAL ENG. TO DES'GN)											60		0			0					4.035	3.63											05/36		
01/34	02/34	INLET HEADWALL											60	2.1	0			0					2.125	3.700	3.61	3.61	3.61	0.00	1.05	0.0	0.0	0.0	0.0			01/34	
02/34	03/34	BASIN NODE FOR CALCULATIONS		1.650							1.093		60		1206			1206						3.800	3.61	3.61	3.61	0.00	7.45	0.0	0.0	0.0	0.0			02/34	
03/34	04/34	WEIR FOR CALCULATIONS											60		0			0					3.800	3.61	3.61	3.34	5.02	7.45	0.0	0.0	0.0	0.0			03/34		
04/34	05/34	WEIR FOR CALCULATIONS											60	1.5	0			0					1.624	3.800	3.34	3.34	3.13	6.38	7.46	0.0	0.0	0.0	0.0	0.05	3.33	04/34	
05/34	06/34	CALCULATION PURPOSES											60	1.5	9			9					1.624	4.000	3.13	3.13	3.03	2.42	8.23	0.0	0.0	0.0	0.0	0.09	3.05	05/34	
06/34		CALCULATION PURPOSES											60		0			0					3.900	3.03											06/34		
01/35	05/36	INLET GULLY IN SAG	0.371			60	102.9	0.819	0.896	0.246			60		300	4.97	0.05	163	104	0.08	02/34		3.929	4.09	3.94	3.63	3.31	0.16	9.7	0.0	0.2	0.0	0.52	2.09	01/35		
05/36	06/36	CUSTOM MANHOLE (STRUCTURAL ENG. TO DES'GN)											60		0			0					4.035	3.63											05/36		
01/36	02/36	INLET GULLY ON GRADE	0.199			60	102.9	0.819	0.896	0.132			60		132	2.08	0.04	99	31	0.03	01/44		4.328	4.28	4.18	4.15	0.11	0.10	9.7	0.0	0.1	0.0	0.25	0.93	01/36		
02/36	03/36	MANHOLE 1050mm DIA											60		0			0					4.234	4.15	4.10	3.99	0.32	0.32	1.2	0.0	0.1	0.0	0.6	1.21	02/36		
03/36	04/36	MANHOLE 1200mm DIA											60		0			0					4.070	3.99	3.99	3.90	0.51	0.57	0.4	0.0	0.0	0.0	0.72	1.29	03/36		
04/36	05/36	MANHOLE 1800mm DIA											60		0			0					4.401	3.90	3.78	3.63	0.30	0.99	1.7	0.0	0.2	0.0	1.24	1.55	04/36		
05/36	06/36	CUSTOM MANHOLE (STRUCTURAL ENG. TO DES'GN)											60		0			0					4.035	3.63	3.61	3.39	0.28	0.10	1.4	0.0	0.1	0.0	3.4	1.54	05/36		
06/36	07/36	MANHOLE 1800mm DIA											60	1.1	0			0				1.121	4.579	3.39	3.39	3.81	-3.98	-1.56	0.0	0.0	0.0	0.0	-0.85	5.47	06/36		
07/36	02/34	INLET HEADWALL											60	1.2	0			0				1.187	3.800	3.61	3.61	3.81	0.00	-1.56	0.0	0.0	0.0	0.0			07/36		
02/34	03/34	BASIN NODE FOR CALCULATIONS		1.650							1.093		60		1206			1206					3.800	3.61											02/34		
02/34	03/34	BASIN NODE FOR CALCULATIONS		1.650							1.093		60		1206			1206					3.800	3.61	3.61	2.50	39.94	0.03	0.0	0.0	0.0	0.0	2.35	4.16			02/34
01/37		CALCULATION PURPOSES											60		0			0					2.700	2.50											01/37		
01/46	02/46	MANHOLE 1200mm DIA											60	10.3	0			0				10.252	4.105	3.07	2.66	2.57	1.31	1.61	1.2	0.0	0.4	0.0	2.82	2.64			01/46
02/46	03/46	INLET HEADWALL											60		0			0					3.000	2.55	2.55	2.55	0.00	1.61	0.0	0.0	0.0	0.0			02/46		
03/46	04/46	BASIN NODE FOR CALCULATIONS	0.131			60	102.9	0.819	0.896	0.087			60		87			87					2.800	2.55	2.55	2.55	0.00	1.69	0.0	0.0	0.0	0.0			03/46		
04/46	05/46	INLET HEADWALL											60		0			0					2.915	2.55	2.55	1.80	2.06	1.69	0.0	0.0	0.0	0.0	1.22	3.48			04/46
05/46	06/46	HEADWALL											60		0			0					2.165	1.76	1.76	1.26	0.52	1.69	0.0	0.0	0.0	0.0	0.3	1.94			05/46
06/46		OPEN CHANNEL BEND											60		0			0					1.500	1.26											06/46		
03/46	04/46	BASIN NODE FOR CALCULATIONS	0.131			60	102.9	0.819	0.896	0.087			60		87			87					2.800	2.55	2.55	1.80	37.59	0.03	0.0	0.0	0.0	0.0	2.18	4.03			03/46
01/47		CALCULATION PURPOSES											60		0			0					1.800	1.60											01/47		
09/59	10/59	STOM MANHOLE 2100x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.934	3.83	3.83	3.83	0.04	0.17	0.2	0.0	0.0	0.0	0.32	3.89			09/59
01/48	02/48	GRATED INLET 900x600											60		0	0.00	0.00	0	0	0.00	02/34		3.600	3.83	3.83	3.79	0.10	0.15	1.7	0.0	0.2	0.0	2.78	1.4			01/48
02/48	03/48	GRATED INLET 900x600											60		0	0.00	0.00	0	0	0.00	02/34		3.100	3.79	3.79	3.76	0.06	0.15	0.4	0.0	0.0	0.0	2.69	1.35			02/48
03/48	04/48	GRATED INLET 900x600											60		0	0.00	0.00	0	0	0.00	06/48		3.200	3.76	3.76	3.72	0.06	0.15	1.0	0.0	0.1	0.0	2.64	1.36			03/48
04/48	05/48	GRATED INLET 900x600											60		0			0					3.100	3.72	3.72	3.71	0.05	0.15	0.2	0.0	0.0	0.0	2.61	1.34			04/48
05/48	06/48	GRATED INLET 900x600											60		0	0.00	0.00	0	0	0.00	02/34		3.200	3.71	3.71	3.69	0.06	0.14	0.7	0.0	0.0	0.0	2.49	1.27			05/48
06/48	07/48	GRATED INLET 900x600											60		0	0.00	0.00	0	0	0.00	02/34		3.100	3.69	3.68	3.67	0.04	0.13	1.7	0.0	0.1	0.0	2.34	1.26			06/48
07/48	08/48	GRATED INLET 900x600											60		0	0.00	0.00	0	0	0.00	02/34		3.200	3.67	3.67	3.65	0.03	0.12	1.0	0.0	0.1	0.0	2.22	1.2			07/48
08/48	09/48	MANHOLE 1050mm DIA											60		0			0					3.100	3.65	3.65	3.63	0.03	0.11	0.2	0.0	0.0	0.0	2.05	1.14			08/48
09/48	10/48	GRATED INLET 900x600											60		0	0.00	0.00	0	0	0.00	02/34		3.100	3.63	3.62	3.61	0.03	0.08	0.2	0.0	0.0	0.0	1.39	0.77			09/48
10/48	11/48	GRATED INLET 900x600											60	4.4	0	0.00	0.00	0	0	0.00	02/34	4.428	3.100	3.61	3.61	3.59	0.03	-0.07	0.2	0.0	0.0	0.0	-1.26	0.66			10/48
11/48	12/48	CUSTOM 900x1200 PIT C/W GRATED INLET 900x600											60		0	0.00	0.00	0	0	0.00	02/34		3.100	3.59	3.51	2.77	1.69	0.80	0.2	0.0	0.1	0.0	4.1	2.82			11/48
12/48	13/48	GRATED INLET 900x600											60		0	0.00	0.00	0	0	0.00	03/46		2.300	2.77	2.68	2.20	1.70										