N

PROPOSED RESERVOIR SITE
(RESERVOIR NOT SHOWN)

WOODLANDS PARK ROAD

SCENIC DRIVE

SCENIC DRIVE

ENTRANCE WAY
TBC (BY OTHERS)

EDGE OF ROAD SEAL

ADMIN BUILDING INCL. WORKSHOP & VISITOR CENTER (2 STORY + BASEMENT CARPARK)

ELECTRICAL COMPOUND

CHLORINE FACILITY

DAF

VERTICAL RETAINING WALL

CHEMICAL FACILITY

OZONE PLANT

BAC

CHLORINE CONTACT TANKS

RW PS

BAC REPLACEMENT MEDIA LAYDOWN (144 BAGS)

WASHOUT BALANCE TANK

WASHWATER THICKENER

SLUDGE THICKENER

SLUDGE BALANCE TANK

FILTER PRESS

SUPERNATANT TANK

WASHWATER THICKENER

SLUDGE THICKENER

VERTICAL RETAINING WALL

MAXIMUM EXTENT OF CONSTRUCTION FOOTPRINT

MANUKA ROAD

SITE BOUNDARY

EXISTING HUIA WTP SITE ' SITE

PLAN
SCALE 1:500

CUT FILL VOLUMES

TOTAL CUT VOLUME: 9,300m³
TOTAL FILL VOLUME: 34,800m³

| EARTH WORKS CUT / FILL DEPTH | | | |
|---|---|---|---|
| CUT / FILL DEPTH | | | DEPTH COLOUR |
| -10 | to | -9 | |
| -9 | to | -8 | |
| -8 | to | -7 | |
| -7 | to | -6 | |
| -6 | to | -5 | |
| -5 | to | -4 | |
| -4 | to | -3 | |
| -3 | to | -2 | |
| -2 | to | -1 | |
| -1 | to | 0 | |
| 0 | to | 1 | |
| 1 | to | 2 | |
| 2 | to | 3 | |
| 3 | to | 4 | |
| 4 | to | 5 | |
| 5 | to | 6 | |
| 6 | to | 7 | |
| 7 | to | 8 | |
| 8 | to | 9 | |
| 9 | to | 10 | |

NOTES:
1. EARTHWORKS SHOWN ARE TO ESTABLISH FINAL WTP PLATFORM ONLY.
2. STAGING AND POSSIBLE ENABLING EARTHWORKS REQUIRED NOT SHOWN

| No | Revision | Note: * indicates signatures on original issue of drawing or last revision of drawing | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 1 | FOR CONSENT | | EP | CG | PF | 11/18 |
| 0 | FOR CONSENT | | EP | CG | PF | 10/18 |

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

Watercare

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27 Napier Street, Freemans Bay, Auckland 1011 New Zealand
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| Drawn | E. PARCIA | Designer | A.BLOW |
| Drafting Check | C.GAMST | Design Check | C.GAMST |
| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:500 | This Drawing must not be used for Construction unless signed as Approved | |

Client WATERCARE SERVICES LTD
Project HUIA WATER TREATMENT PLANT
Title CUT AND FILL THEMATIC MAP EARTHWORKS PLATFORM ONLY

Original Size A1
Drawing No: 51-3357505-C005
Rev: 1

Plot Date: 21 May 2019 - 3:27 PM
Plotted by: Andrew Blow
Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C005.dwg

N

PROPOSED RESERVOIR SITE
(RESERVOIR NOT SHOWN)




EXISTING HUIA WTP SITE ' SITE

## CUT FILL VOLUMES

TOTAL CUT VOLUME: 41,460m³
TOTAL FILL VOLUME: 30,400m³

TOTAL DISTURBED AREA: 27,200m²

| EARTH WORKS CUT / FILL DEPTH | | | |
|---|---|---|---|
| CUT / FILL DEPTH | | | DEPTH COLOUR |
| -13 | to | -12 | |
| -12 | to | -11 | |
| -11 | to | -10 | |
| -10 | to | -9 | |
| -9 | to | -8 | |
| -8 | to | -7 | |
| -7 | to | -6 | |
| -6 | to | -5 | |
| -5 | to | -4 | |
| -4 | to | -3 | |
| -3 | to | -2 | |
| -2 | to | -1 | |
| -1 | to | 0 | |
| 0 | to | 1 | |
| 1 | to | 2 | |
| 2 | to | 3 | |
| 3 | to | 4 | |
| 4 | to | 5 | |
| 5 | to | 6 | |
| 6 | to | 7 | |
| 7 | to | 8 | |
| 8 | to | 9 | |
| 9 | to | 10 | |

NOTES:
1. EARTHWORKS SHOWN ARE TO ESTABLISH FINAL WTP PLATFORM ONLY.
2. STAGING AND POSSIBLE ENABLING EARTHWORKS REQUIRED NOT SHOWN

PLAN
SCALE 1:500

| No | Revision | Note: * indicates signatures on original issue of drawing or last revision of drawing | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|---|
| 1 | FOE CONSENT | | EP | CG | PF | 11/18 |
| 0 | FOR CONSENT | | EP | CG | PF | 10/18 |

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

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| Drafting Check | C.GAMST | Design Check | C.GAMST |
| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:500 | This Drawing must not be used for Construction unless signed as Approved | |

Client: WATERCARE SERVICES LTD
Project: HUIA REPLACEMENT WATER TREATMENT PLANT
Title: EARTHWORKS CUT/FILL DEPTHS
WATER TREATMENT PLANT SITE

Original Size A1
Drawing No: 51-3357505-C006
Rev: 1

Plot Date: 21 May 2019 - 11:44 AM
Plotted by: Ella Genn Parcia
Cad File No: \\ghdnet\ghd\NZ\Auckland\Projects\51\3357505\CADD\Drawings\51-3357505-C006.dwg

DRAWING DELETED

| No | Revision | Note: * indicates signatures on original issue of drawing or last revision of drawing | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 1 | FOR CONSENT | | RB | CG | PF | 11/18 |
| 0 | FOR CONSENT | | RB | CG | PF | 10/18 |

0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

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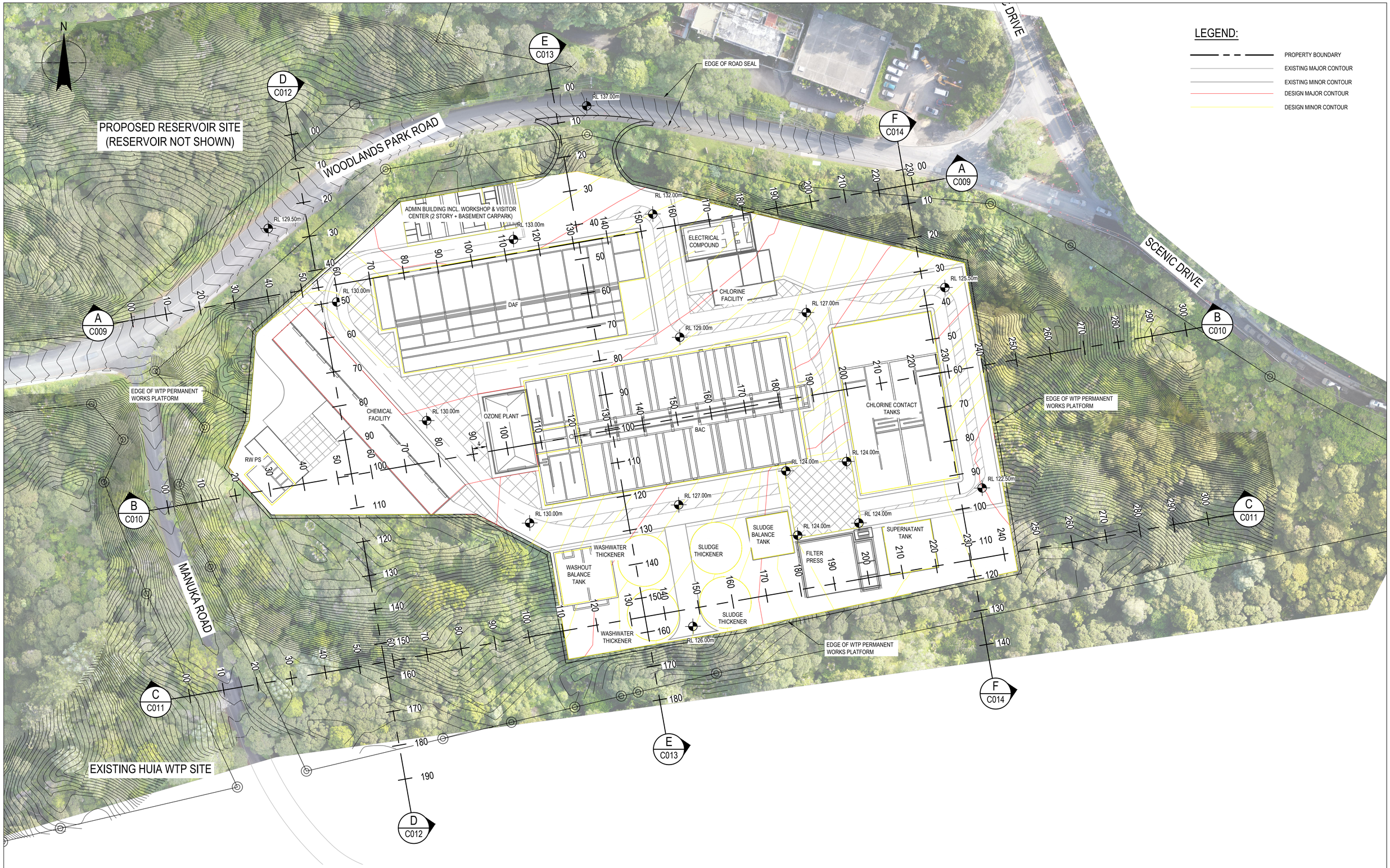
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| Drafting Check | A. BLOW | Design Check | C. GAMST |
| Approved (Project Director) | P. FREE | | |
| Date | 10/2018 | | |
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Client **WATERCARE SERVICES LTD**
Project **HUIA REPLACEMENT WATER TREATMENT PLANT**
Title **EARTHWORKS CUT/FILL DEPTHS RESERVOIR SITE**

Original Size **A1**
Drawing No: **51-3357505-C007**
Rev: **1**

Plot Date: 21 May 2019 - 1:25 PM
Plotted by: Andrew Blow
Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C007.dwg




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|---|---|---|---|---|---|---|
| 1 | FOR CONSENT | | RG | CG | PF | 11/18 |
| 0 | FOR CONSENT | | RG | CG | PF | 10/18 |

SCALE 1:500 AT ORIGINAL SIZE

0 5 10 15 20 25m

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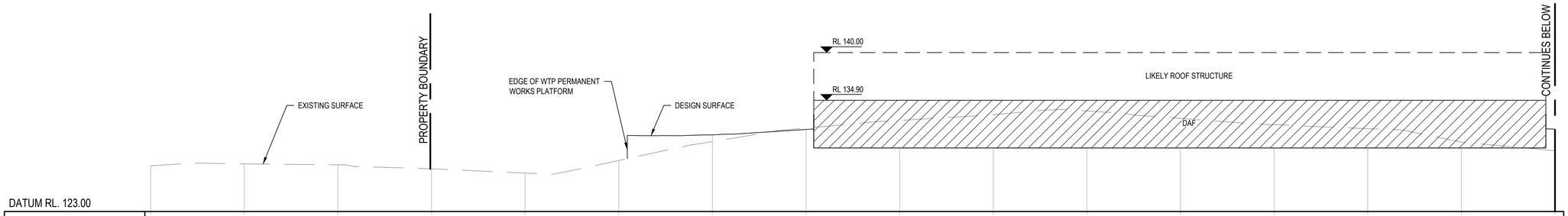
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| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:500 | This Drawing must not be used for Construction unless signed as Approved | |

Client WATERCARE SERVICES LTD
Project HUIA REPLACEMENT WATER TREATMENT PLANT
Title WTP PLAN OF SECTIONS

Original Size **A1**
Drawing No: **51-3357505-C008**
Rev: **1**

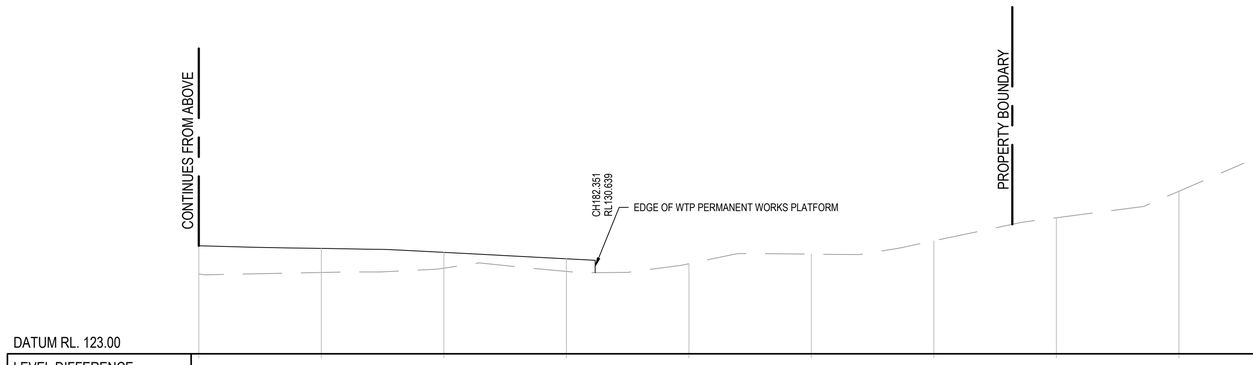
Plot Date: 21 May 2019 - 1:30 PM Plotted by: Andrew Blow Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C008.dwg




DATUM RL. 123.00

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.71 | -0.15 | -4.43 | -5.05 | -5.46 | -4.65 | -3.99 | -3.57 | -2.13 | 2.31 |
| DESIGN SURFACE LEVEL | 127.892 | 128.103 | 127.997 | 127.563 | 127.122 | 128.462 | 131.199 | 131.779 | 129.800 | 129.800 | 129.800 | 129.800 | 129.800 | 129.800 | 129.800 | 131.817 |
| EXISTING GROUND LEVEL | 127.89 | 128.10 | 128.00 | 127.56 | 127.12 | 128.46 | 130.49 | 131.93 | 132.73 | 133.35 | 133.76 | 132.95 | 132.29 | 131.87 | 130.43 | 129.51 |
| CHAINAGE | 0.00 | 10.00 | 20.00 | 30.00 | 40.00 | 50.00 | 60.00 | 70.00 | 80.00 | 90.00 | 100.00 | 110.00 | 120.00 | 130.00 | 140.00 | 150.00 |

A C008 SECTION
SCALE 1 : 250




DATUM RL. 123.00

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | 2.31 | 1.96 | 1.29 | 1.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | | | | | | | | | | | | | | | | |
| DESIGN SURFACE LEVEL | 131.817 | 131.602 | 131.277 | 130.760 | 130.357 | 131.134 | 132.226 | 134.106 | 136.271 | | | | | | | | | | | | | | | | | | | |
| EXISTING GROUND LEVEL | 129.51 | 129.64 | 129.99 | 129.73 | 130.36 | 131.13 | 132.23 | 134.11 | 136.27 | | | | | | | | | | | | | | | | | | | |
| CHAINAGE | 150.00 | 160.00 | 170.00 | 180.00 | 190.00 | 200.00 | 210.00 | 220.00 | 230.00 | 240.00 | 250.00 | 260.00 | 270.00 | 280.00 | 283.29 | | | | | | | | | | | | | |

A C008 SECTION
SCALE 1 : 250

| No | Revision | Note: * indicates signatures on original issue of drawing or last revision of drawing | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|---|
| 1 | FOR CONSENT | | RG | CG | PF | 11/18 |
| 0 | FOR CONSENT | | RG | CG | PF | 10/18 |

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

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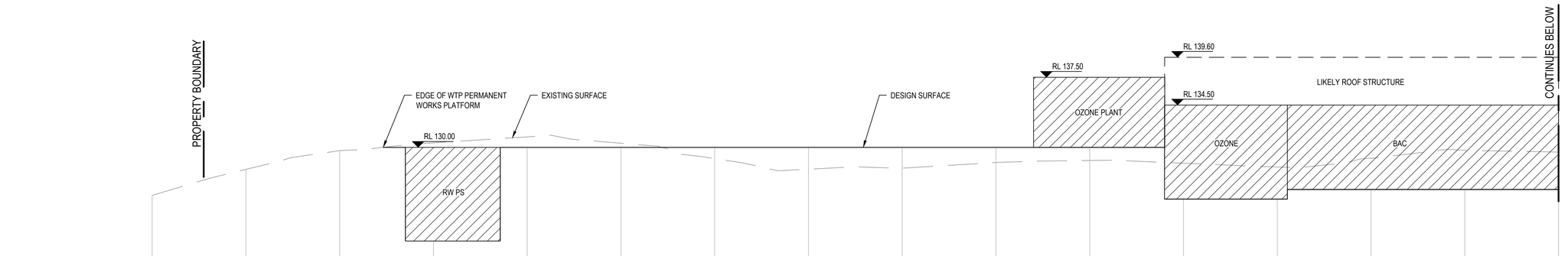
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| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:250 | This Drawing must not be used for Construction unless signed as Approved | |

Client **WATERCARE SERVICES LTD**
Project **HUIA REPLACEMENT WATER TREATMENT PLANT**
Title **WATER TREATMENT PLANT SECTIONS, SHEET 1 OF 6**

Original Size **A1**
Drawing No: **51-3357505-C009**
Rev: **1**

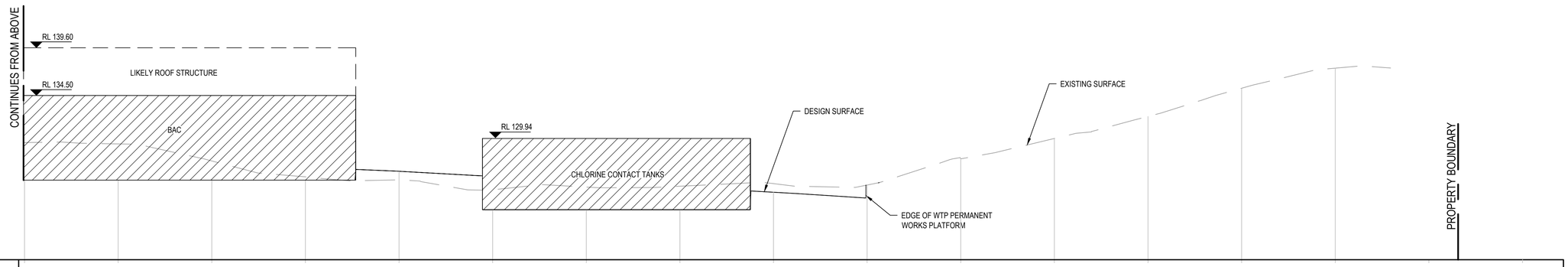
Plot Date: 21 May 2019 - 1:31 PM
Plotted by: Andrew Blow
Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C009.dwg




DATUM RL. 117.00

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | 0.00 | 0.00 | 0.00 | -5.49 | -1.12 | -0.44 | 1.20 | 2.33 | 2.22 | 1.62 | 1.40 | -6.66 | -6.26 | -3.34 | -4.19 | -4.01 |
| DESIGN SURFACE LEVEL | 124.881 | 127.649 | 129.658 | 120.000 | 130.000 | 130.000 | 130.000 | 130.000 | 130.000 | 130.000 | 130.000 | 124.500 | 124.500 | 125.500 | 125.500 | 125.500 |
| EXISTING GROUND LEVEL | 124.88 | 127.65 | 129.66 | 130.49 | 131.12 | 130.44 | 128.80 | 127.67 | 127.78 | 128.38 | 128.60 | 128.31 | 127.91 | 128.84 | 129.69 | 129.51 |
| CHAINAGE | 0.00 | 10.00 | 20.00 | 30.00 | 40.00 | 50.00 | 60.00 | 70.00 | 80.00 | 90.00 | 100.00 | 110.00 | 120.00 | 130.00 | 140.00 | 150.00 |

B C008 SECTION
SCALE 1 : 250




DATUM RL. 117.00

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | -4.01 | -3.86 | -2.07 | -0.36 | 0.92 | -2.14 | -2.42 | -2.50 | -0.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| DESIGN SURFACE LEVEL | 125.500 | 125.500 | 125.500 | 125.500 | 126.443 | 122.340 | 122.340 | 122.340 | 124.212 | 124.951 | 127.894 | 129.915 | 132.265 | 135.271 | 137.435 | | | |
| EXISTING GROUND LEVEL | 129.51 | 129.36 | 127.57 | 125.86 | 125.52 | 124.48 | 124.76 | 124.84 | 125.14 | 124.95 | 127.89 | 129.91 | 132.26 | 135.27 | 137.43 | | | |
| CHAINAGE | 150.00 | 160.00 | 170.00 | 180.00 | 190.00 | 200.00 | 210.00 | 220.00 | 230.00 | 240.00 | 250.00 | 260.00 | 270.00 | 280.00 | 290.00 | 300.00 | 310.00 | |

B C008 SECTION
SCALE 1 : 250

| No | Revision | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|
| 1 | FOR CONSENT | RG | CG | PF | 11/18 |
| 0 | FOR CONSENT | RG | CG | PF | 10/18 |

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0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

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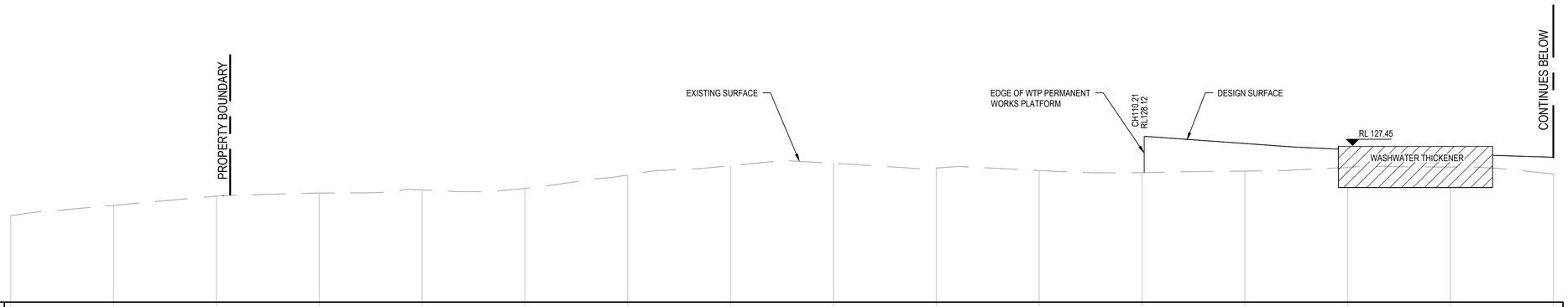
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| Drafting Check | C.GAMST | Design Check | C.GAMST |
| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:250 | This Drawing must not be used for Construction unless signed as Approved | |

Client **WATERCARE SERVICES LTD**
Project **HUIA REPLACEMENT WATER TREATMENT PLANT**
Title **WATER TREATMENT PLANT SECTIONS, SHEET 2 OF 6**

Original Size **A1** Drawing No: **51-3357505-C010** Rev: **1**

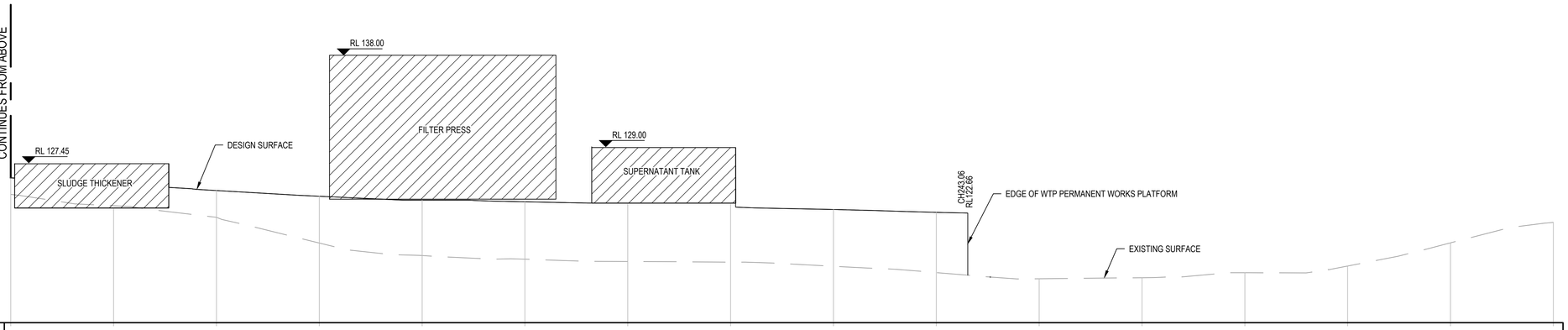
Plot Date: 21 May 2019 - 1:31 PM Plotted by: Andrew Blow Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C010.dwg




DATUM RL. 112.00

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.68 | -1.94 | -1.99 | 1.61 |
| DESIGN SURFACE LEVEL | 120.41 | 121.41 | 122.31 | 122.61 | 122.92 | 123.07 | 124.37 | 125.28 | 125.51 | 125.05 | 124.81 | 124.60 | 127.43 | 123.15 | 123.15 | 126.08 |
| EXISTING GROUND LEVEL | 120.41 | 121.41 | 122.32 | 122.61 | 122.92 | 123.07 | 124.37 | 125.28 | 125.51 | 125.05 | 124.81 | 124.60 | 124.75 | 125.09 | 125.14 | 124.47 |
| CHAINAGE | 0.00 | 10.00 | 20.00 | 30.00 | 40.00 | 50.00 | 60.00 | 70.00 | 80.00 | 90.00 | 100.00 | 110.00 | 120.00 | 130.00 | 140.00 | 150.00 |

C SECTION
C008 SCALE 1 : 250




DATUM RL. 112.00

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | 1.61 | -0.22 | 2.60 | 4.54 | 5.38 | 5.58 | 7.85 | 7.91 | 5.52 | 5.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| DESIGN SURFACE LEVEL | 126.08 | 123.15 | 124.85 | 124.29 | 123.91 | 123.75 | 123.60 | 123.60 | 123.00 | 122.73 | 116.27 | 116.38 | 116.86 | 117.51 | 119.76 | 121.75 |
| EXISTING GROUND LEVEL | 124.47 | 123.37 | 122.25 | 119.75 | 118.53 | 118.17 | 117.95 | 117.89 | 117.49 | 116.87 | 116.27 | 116.38 | 116.86 | 117.51 | 119.76 | 121.75 |
| CHAINAGE | 150.00 | 160.00 | 170.00 | 180.00 | 190.00 | 200.00 | 210.00 | 220.00 | 230.00 | 240.00 | 250.00 | 260.00 | 270.00 | 280.00 | 290.00 | 300.00 |

C SECTION
C008 SCALE 1 : 250

| No | Revision | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|
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0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

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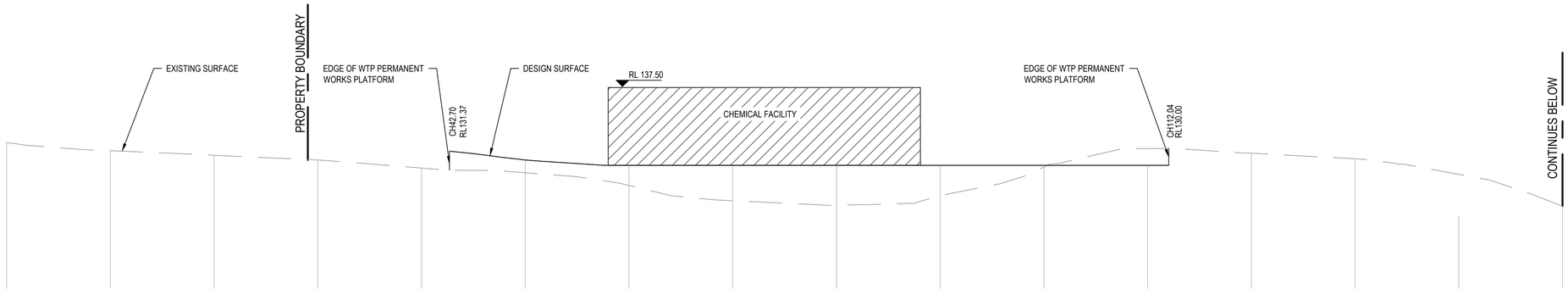
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| Drafting Check | C.GAMST | Design Check | C.GAMST |
| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:250 | This Drawing must not be used for Construction unless signed as Approved | |

Client **WATERCARE SERVICES LTD**
Project **HUIA REPLACEMENT WATER TREATMENT PLANT**
Title **WATER TREATMENT PLANT SECTIONS, SHEET 3 OF 6**

Original Size **A1**
Drawing No: **51-3357505-C011**
Rev: **1**

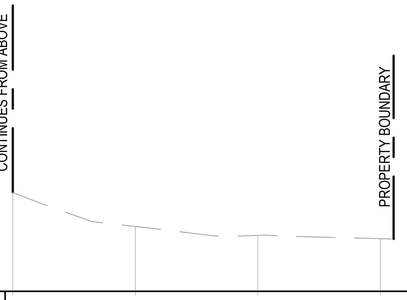
Plot Date: 21 May 2019 - 10:12 PM
Plotted by: Andrew Blow
Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C011.dwg




DATUM RL. 118.00

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.23 | 1.93 | 3.40 | 3.84 | 2.91 | 0.15 | -1.62 | 0.00 | 0.00 | 0.00 | 0.00 |
| DESIGN SURFACE LEVEL | 132.20 | 131.41 | 130.98 | 130.51 | 129.74 | 130.52 | 130.00 | 130.00 | 130.00 | 130.00 | 130.00 | 130.00 | 131.17 | 130.64 | 129.13 | 126.07 |
| EXISTING GROUND LEVEL | 132.20 | 131.41 | 130.98 | 130.51 | 129.74 | 129.29 | 128.07 | 126.60 | 126.16 | 127.09 | 129.85 | 131.62 | 131.17 | 130.64 | 129.13 | 126.07 |
| CHAINAGE | 0.00 | 10.00 | 20.00 | 30.00 | 40.00 | 50.00 | 60.00 | 70.00 | 80.00 | 90.00 | 100.00 | 110.00 | 120.00 | 130.00 | 140.00 | 150.00 |

D C008 SECTION
SCALE 1 : 250




DATUM RL. 118.00

| | | | | | | |
|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | 0.00 | 0.00 | 0.00 | 0.00 | | |
| DESIGN SURFACE LEVEL | 126.07 | 123.29 | 122.56 | 122.30 | | |
| EXISTING GROUND LEVEL | 126.07 | 123.29 | 122.56 | 122.30 | | |
| CHAINAGE | 150.00 | 160.00 | 170.00 | 180.00 | 190.00 | 194.44 |

D C008 SECTION
SCALE 1 : 250

| No | Revision | Note: * indicates signatures on original issue of drawing or last revision of drawing | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|---|
| 1 | FOR CONSENT | | RG | CG | PF | 11/18 |
| 0 | FOR CONSENT | | RG | CG | PF | 10/18 |

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

Watercare

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**DO NOT SCALE**

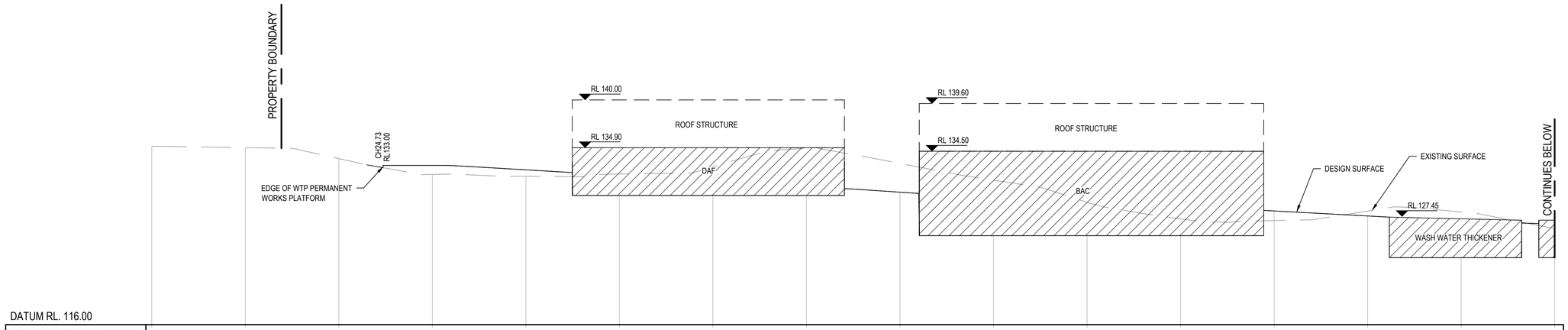
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|---|---|---|---|
| Drawn | R.GUEVARRA | Designer | A.BLOW |
| Drafting Check | C.GAMST | Design Check | C.GAMST |
| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:250 | This Drawing must not be used for Construction unless signed as Approved | |

Client WATERCARE SERVICES LTD
Project HUIA REPLACEMENT WATER TREATMENT PLANT
Title WATER TREATMENT PLANT SECTIONS, SHEET 4 OF 6

Original Size A1 **Drawing No: 51-3357505-C012** **Rev: 1**

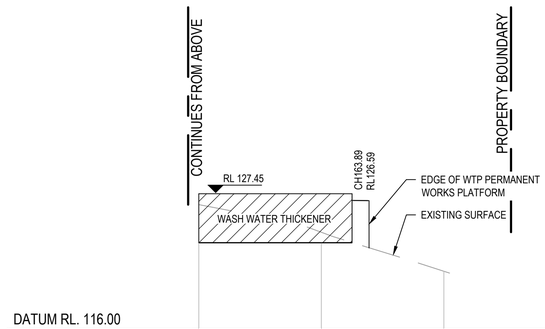
Plot Date: 21 May 2019 - 10:14 PM Plotted by: Andrew Blow Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C012.dwg




DATUM RL. 116.00

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | 0.00 | 0.00 | 0.00 | 0.95 | 0.68 | -3.79 | -4.55 | -6.54 | -3.07 | -5.93 | -3.57 | -1.80 | 1.03 | -0.52 | -4.88 | -3.11 |
| DESIGN SURFACE LEVEL | 135.06 | 134.90 | 133.74 | 133.00 | 132.53 | 129.80 | 129.80 | 129.80 | 130.15 | 125.50 | 125.50 | 125.50 | 128.15 | 127.61 | 123.15 | 123.15 |
| EXISTING GROUND LEVEL | 135.06 | 134.90 | 133.74 | 132.05 | 131.85 | 132.09 | 132.85 | 134.84 | 133.22 | 131.43 | 129.07 | 127.30 | 127.11 | 128.13 | 128.03 | 126.26 |
| CHAINAGE | 0.00 | 10.00 | 20.00 | 30.00 | 40.00 | 50.00 | 60.00 | 70.00 | 80.00 | 90.00 | 100.00 | 110.00 | 120.00 | 130.00 | 140.00 | 150.00 |

E C008 SECTION
SCALE 1 : 250




DATUM RL. 116.00

| | | | | | | |
|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | -3.11 | -0.85 | 0.00 | | | |
| DESIGN SURFACE LEVEL | 123.15 | 123.15 | 120.82 | | | |
| EXISTING GROUND LEVEL | 126.26 | 124.00 | 120.82 | | | |
| CHAINAGE | 150.00 | 160.00 | 170.00 | 180.00 | 190.00 | 194.44 |

E C008 SECTION
SCALE 1 : 250

| No | Revision | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|
| 1 | FOR CONSENT | RG | CG | PF | 11/18 |
| 0 | FOR CONSENT | RG | CG | PF | 10/18 |

Note: * indicates signatures on original issue of drawing or last revision of drawing

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

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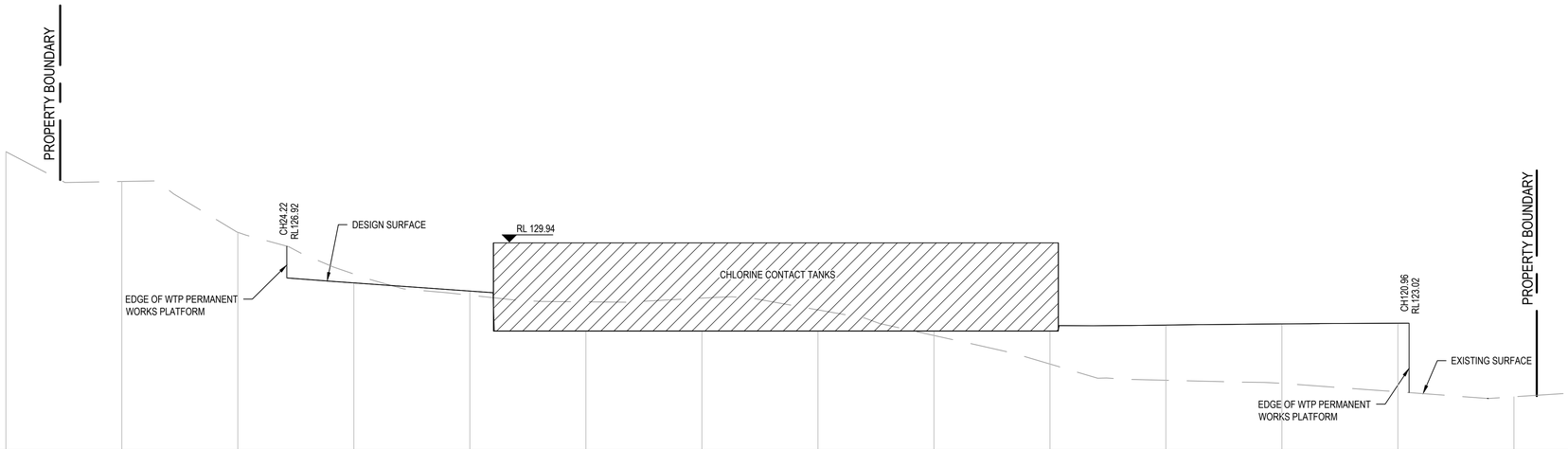
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| Drafting Check | C.GAMST | Design Check | C.GAMST |
| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:250 | This Drawing must not be used for Construction unless signed as Approved | |

Client **WATERCARE SERVICES LTD**
Project **HUIA REPLACEMENT WATER TREATMENT PLANT**
Title **WATER TREATMENT PLANT SECTIONS, SHEET 5 OF 6**

Original Size **A1**
Drawing No: **51-3357505-C013**
Rev: **1**

Plot Date: 21 May 2019 - 10:17 PM
Plotted by: Andrew Blow
Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C013.dwg




DATUM RL. 112.00

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LEVEL DIFFERENCE CUT - / FILL + | 0.00 | 0.00 | 0.00 | -0.76 | 0.36 | -2.52 | -2.84 | -1.83 | 0.38 | 2.84 | 4.76 | 5.12 | 5.91 | 0.00 | |
| DESIGN SURFACE LEVEL | 137.79 | 135.23 | 130.85 | 126.49 | 125.79 | 122.34 | 122.34 | 122.34 | 122.34 | 122.34 | 122.86 | 122.96 | 123.02 | 116.68 | |
| EXISTING GROUND LEVEL | 137.79 | 135.23 | 130.85 | 127.25 | 125.43 | 124.86 | 125.18 | 124.17 | 121.96 | 119.50 | 118.10 | 117.84 | 117.11 | 116.68 | |
| CHAINAGE | 0.00 | 10.00 | 20.00 | 30.00 | 40.00 | 50.00 | 60.00 | 70.00 | 80.00 | 90.00 | 100.00 | 110.00 | 120.00 | 130.00 | 140.00 | 150.00 |

F C008 SECTION
SCALE 1 : 250

| No | Revision | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|
| 1 | FOR CONSENT | RG | CG | PF | 11/18 |
| 0 | FOR CONSENT | RG | CG | PF | 10/18 |

Note: * indicates signatures on original issue of drawing or last revision of drawing

0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

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| Drafting Check | C.GAMST | Design Check | C.GAMST |
| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:250 | This Drawing must not be used for Construction unless signed as Approved | |

Client **WATERCARE SERVICES LTD**
Project **HUIA REPLACEMENT WATER TREATMENT PLANT**
Title **WATER TREATMENT PLANT SECTIONS, SHEET 6 OF 6**

Original Size **A1**
Drawing No: **51-3357505-C014**
Rev: **1**

Plot Date: 21 May 2019 - 10:19 PM Plotted by: Andrew Blow Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C014.dwg

DRAWING DELETED

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|---|---|---|---|---|---|---|
| 0 | FOR CONSENT | | RG | CG | PF | 10/18 |

0 5 10 15 20 25m

SCALE 1:500 AT ORIGINAL SIZE

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| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
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Client **WATERCARE SERVICES LTD**
Project **HUIA REPLACEMENT WATER TREATMENT PLANT**
Title **RESERVOIR PLAN OF SECTIONS**

Original Size **A1**
Drawing No: **51-3357505-C015**
Rev: **0**

Plot Date: 21 May 2019 - 1:25 PM
Plotted by: Andrew Blow
Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C015.dwg

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| No | Revision | Note: * indicates signatures on original issue of drawing | Drawn | Job Manager | Project Director | Date |
|---|---|---|---|---|---|---|
| | | | | | | |
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| | | | | | | |
| 1 | FOR CONSENT | | RG | CG | PF | 11/18 |
| 0 | FOR CONSENT | | RG | CG | PF | 10/18 |

0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

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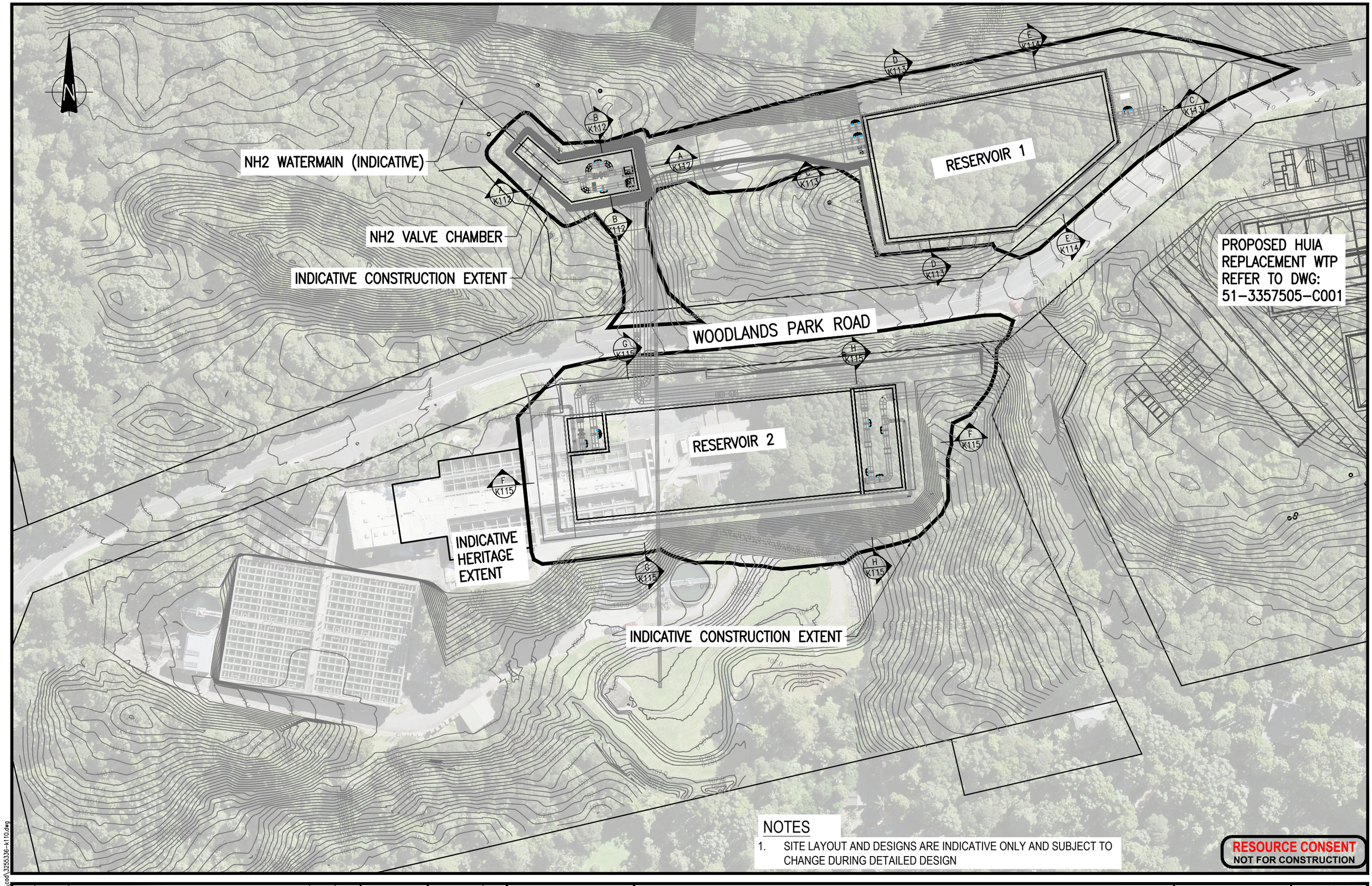
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| Drafting Check | C.GAMST | Design Check | C.GAMST |
| Approved (Project Director) | P.FREE | | |
| Date | 10/2018 | | |
| Scale | 1:250 | This Drawing must not be used for Construction unless signed as Approved | |

Client WATERCARE SERVICES LTD
Project HUIA REPLACEMENT WATER TREATMENT PLANT
Title RESERVOIR SITE
SECTIONS SHEET 1 OF 1

Original Size **A1** Drawing No: **51-3357505-C016** Rev: **1**

Plot Date: 21 May 2019 - 1:25 PM Plotted by: Andrew Blow Cad File No: G:\51\3357505\CADD\Drawings\51-3357505-C016.dwg




NOTES

1. SITE LAYOUT AND DESIGNS ARE INDICATIVE ONLY AND SUBJECT TO CHANGE DURING DETAILED DESIGN

**RESOURCE CONSENT**
**NOT FOR CONSTRUCTION**

| ISSUE | DATE | AMENDMENT | BY | APPD. |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| OB | 21.05.19 | ISSUED FOR RESOURCE CONSENT | GT | JR |

| | | | |
|---|---|---|---|
| DESIGNED | SP | 05.19 |
| DES. APPROVED | PA | 05.19 |
| DRAWN | SMB | 05.19 |
| DWG. APPROVED | SP | 05.19 |
| WSL DESIGN MGMT. | | |
| WSL PROJ. LEAD | | |
| BY | | DATE |

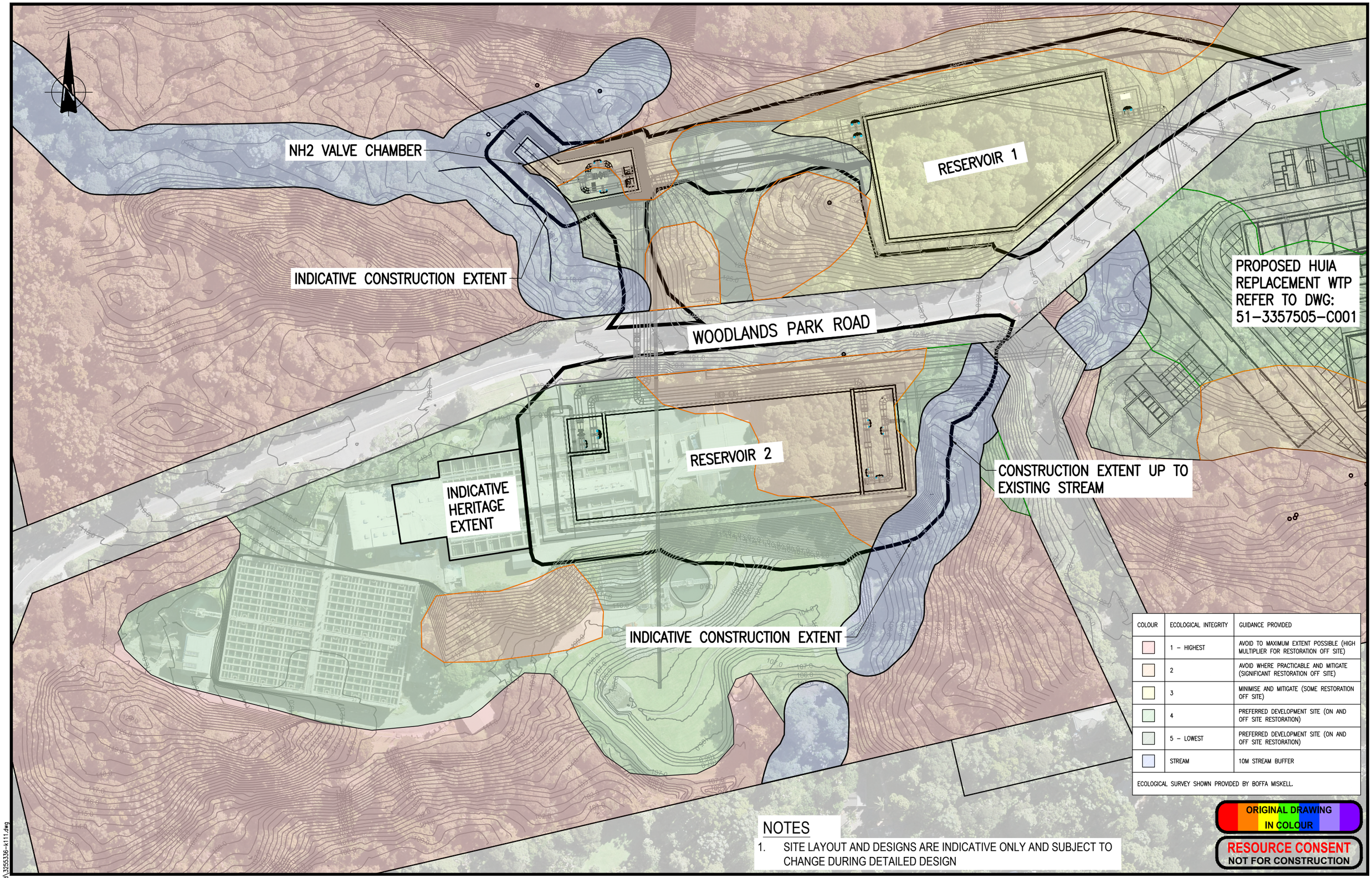
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# HUIA REPLACEMENT WATER TREATMENT PLANT
## TREATED WATER STORAGE RESERVOIRS
### RESERVOIR CONCEPT – PLAN

| | |
|---|---|
| CAD FILE 3255336-K110 | DATE 21.05.19 |
| ORIGINAL SCALE A3 1:1000 | CONTRACT No. – |
| REF No. | |
| DWG No. 3255336 –K110 | ISSUE OB |

Document: p:\3255\3255336\cad\3255336-k110.dwg




| COLOUR | ECOLOGICAL INTEGRITY | GUIDANCE PROVIDED |
|---|---|---|
| | 1 – HIGHEST | AVOID TO MAXIMUM EXTENT POSSIBLE (HIGH MULTIPLIER FOR RESTORATION OFF SITE) |
| | 2 | AVOID WHERE PRACTICABLE AND MITIGATE (SIGNIFICANT RESTORATION OFF SITE) |
| | 3 | MINIMISE AND MITIGATE (SOME RESTORATION OFF SITE) |
| | 4 | PREFERRED DEVELOPMENT SITE (ON AND OFF SITE RESTORATION) |
| | 5 – LOWEST | PREFERRED DEVELOPMENT SITE (ON AND OFF SITE RESTORATION) |
| | STREAM | 10M STREAM BUFFER |
| ECOLOGICAL SURVEY SHOWN PROVIDED BY BOFFA MISKELL. | | |

ORIGINAL DRAWING IN COLOUR

RESOURCE CONSENT NOT FOR CONSTRUCTION

## NOTES

1. SITE LAYOUT AND DESIGNS ARE INDICATIVE ONLY AND SUBJECT TO CHANGE DURING DETAILED DESIGN

| ISSUE | DATE | AMENDMENT | BY | APPD. |
|---|---|---|---|---|
| OB | 21.05.19 | ISSUED FOR RESOURCE CONSENT | GT | JR |

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|---|---|---|
| DESIGNED | SP | 05.19 |
| DES. APPROVED | PA | 05.19 |
| DRAWN | SMB | 05.19 |
| DWG. APPROVED | SP | 05.19 |
| WSL DESIGN MGMT. | | |
| WSL PROJ. LEAD | | |
| | BY | DATE |

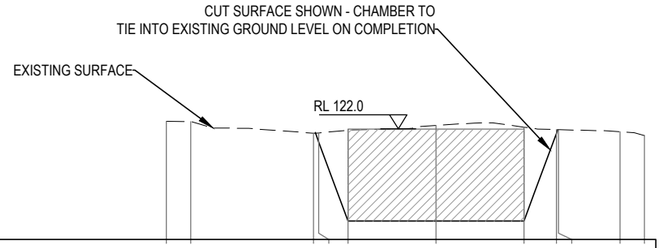
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# HUIA REPLACEMENT WATER TREATMENT PLANT
# TREATED WATER STORAGE RESERVOIRS
## RESERVOIR CONCEPT – ECOLOGICAL FEATURES

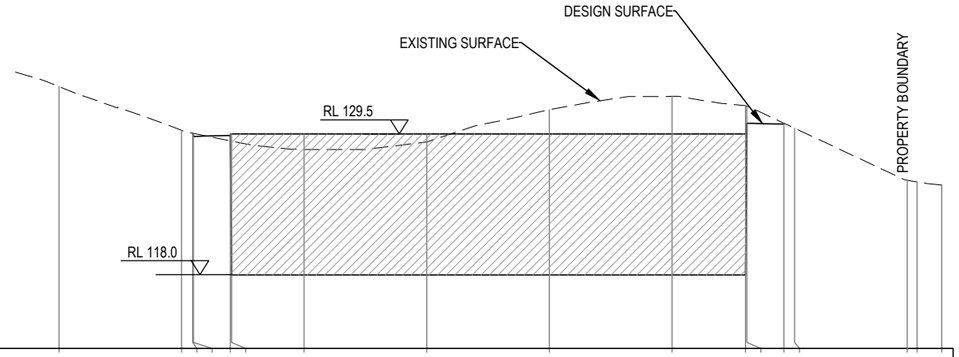
| | |
|---|---|
| CAD FILE 3255336-K111 | DATE 21.05.19 |
| ORIGINAL SCALE A3 1:1000 | CONTRACT No. – |
| REF No. | |
| DWG No. 3255336 –K111 | ISSUE OB |

Document: p:\325\3255336\cad\3255336-k111.dwg

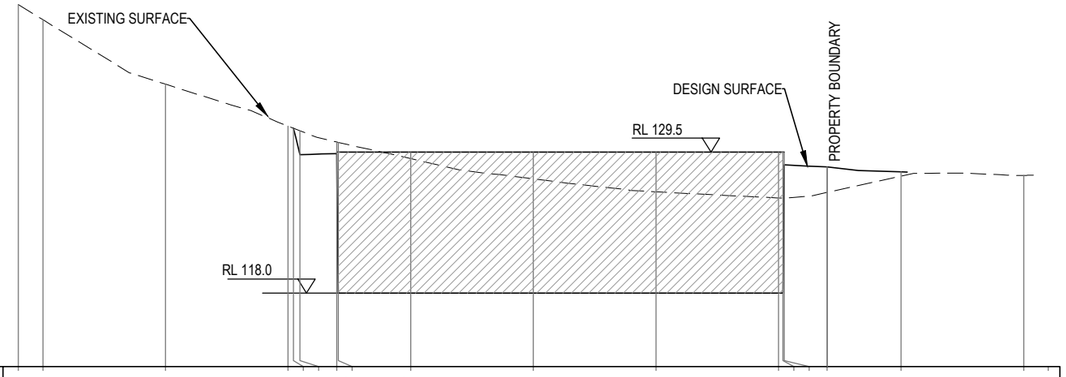

CUT SURFACE SHOWN - CHAMBER TO
TIE INTO EXISTING GROUND LEVEL ON COMPLETION
EXISTING SURFACE
RL 122.0

Datum 113.00

| | | |

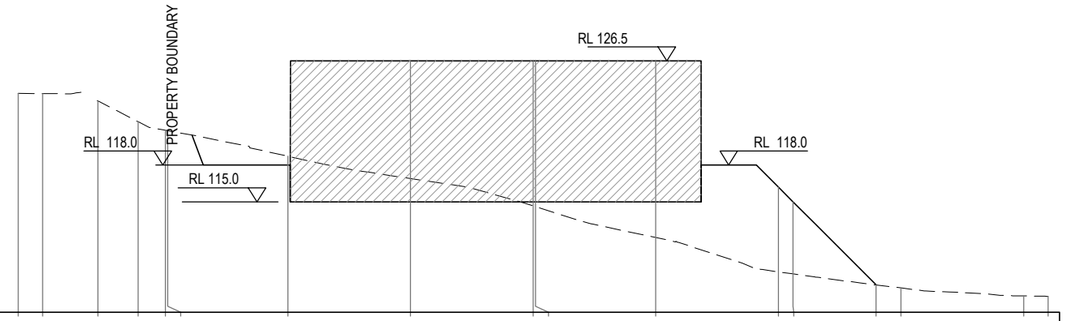

DESIGN SURFACE
EXISTING SURFACE
PROPERTY BOUNDARY
RL 129.5
RL 118.0

| | | |


EXISTING SURFACE
DESIGN SURFACE
PROPERTY BOUNDARY
RL 129.5
RL 118.0

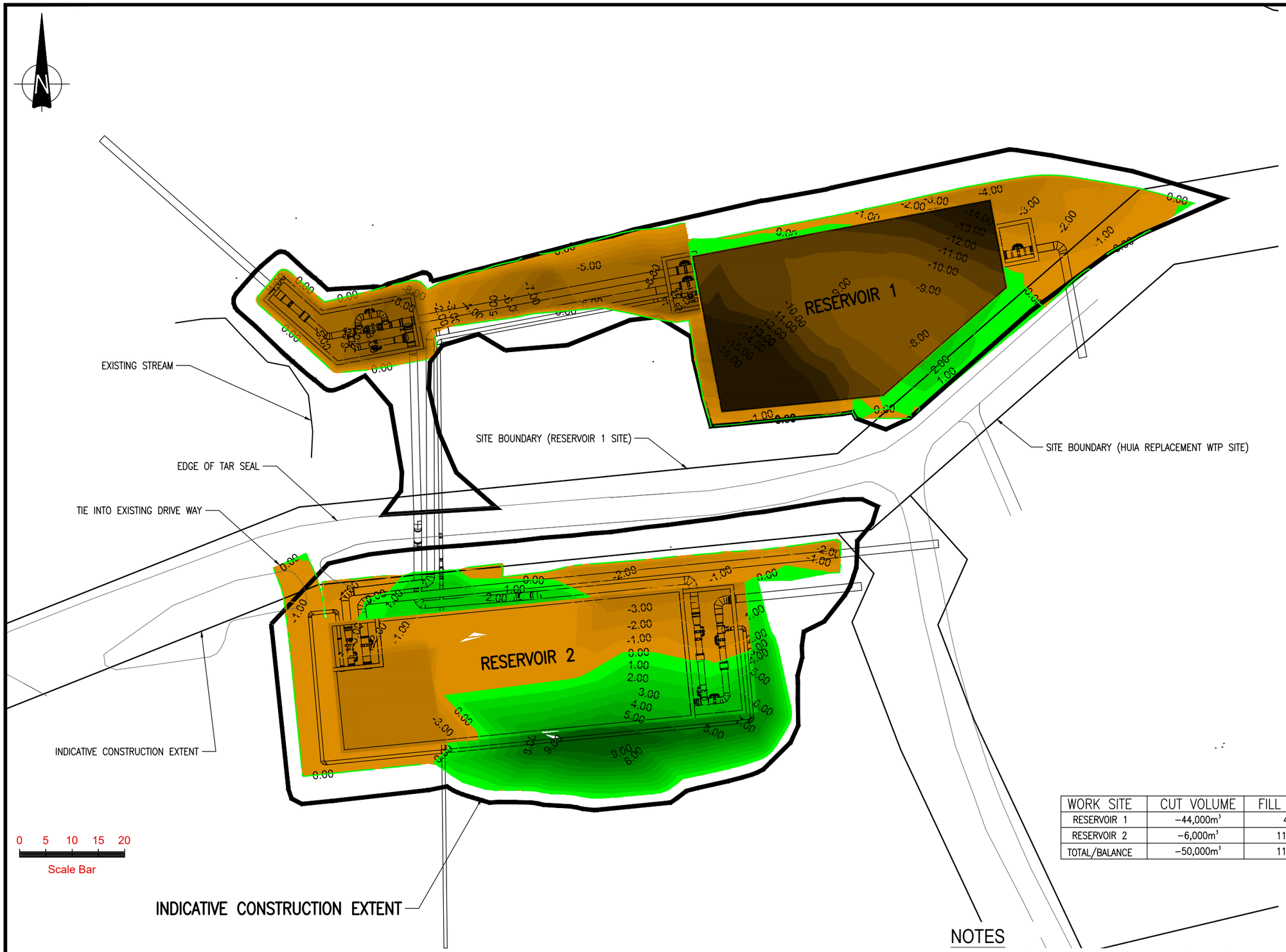
Datum 112.00

| | | |




Datum 106.00

| | | |




## EARTH WORKS CUT / FILL DEPTH

| CUT / FILL DEPTH | | | DEPTH COLOUR |
|---|---|---|---|
| -16 | to | -13 | |
| -13 | to | -12 | |
| -12 | to | -11 | |
| -11 | to | -10 | |
| -10 | to | -9 | |
| -9 | to | -8 | |
| -8 | to | -7 | |
| -7 | to | -6 | |
| -6 | to | -5 | |
| -5 | to | -4 | |
| -4 | to | -3 | |
| -3 | to | -2 | |
| -2 | to | -1 | |
| -1 | to | 0 | |
| 0 | to | 1 | |
| 1 | to | 2 | |
| 2 | to | 3 | |
| 3 | to | 4 | |
| 4 | to | 5 | |
| 5 | to | 6 | |
| 6 | to | 7 | |
| 7 | to | 8 | |
| 8 | to | 9 | |
| 9 | to | 10 | |

| WORK SITE | CUT VOLUME | FILL VOLUME | BALANCE | DISTURBED AREA |
|---|---|---|---|---|
| RESERVOIR 1 | −44,000m³ | 400m³ | −43,600m³ | 8,800m² |
| RESERVOIR 2 | −6,000m³ | 11,000m³ | 5,000m³ | 9,000m² |
| TOTAL/BALANCE | −50,000m³ | 11,400m³ | −38,600m³ | 17,800m² |

## NOTES

1. SITE LAYOUT AND DESIGNS ARE INDICATIVE ONLY AND SUBJECT TO CHANGE DURING DETAILED DESIGN

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RESOURCE CONSENT
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| ISSUE | DATE | AMENDMENT | BY | APPD. |
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|---|---|---|
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| DRAWN | SMB | 05.19 |
| DWG. APPROVED | SP | 05.19 |
| WSL DESIGN MGMT. | | |
| WSL PROJ. LEAD | | |

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# HUIA REPLACEMENT WATER TREATMENT PLANT
# TREATED WATER STORAGE RESERVOIRS
## RESERVOIR CONCEPT – EARTHWORKS PLAN

| | |
|---|---|
| CAD FILE 3255336-K116 | DATE 21.05.19 |
| ORIGINAL SCALE A3 1:1000 | CONTRACT No. – |
| REF No. | |
| DWG No. 3255336 –K116 | ISSUE OB |

Document: p:\3255\3255336\cad\3255336-k116.dwg