Deed

Tenth Deed of Variation to Elara Marsden Park Planning Agreement

Under s7.4 of the *Environmental Planning and Assessment Act 1979*

Blacktown City Council

Stockland Development Pty Ltd

Date: 12 December 2022

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Tenth Deed of Variation to Elara Marsden Park Planning Agreement

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Tenth Deed of Variation to Elara Marsden Park Planning Agreement

Summary Sheet

Council:

Name: Blacktown City Council

Address: 62 Flushcombe Rd, Blacktown NSW 2148

Telephone: (02) 9839 6461

Email: council@blacktown.nsw.gov.au

Representative: Dennis Bagnall

Developer:

Name: Stockland Development Pty Limited

Address: Level 25, 133 Castlereagh Street, Sydney NSW 2000

Telephone: (02) 9035 2000

Email: Mike.Milligan@stockland.com.au

Representative: Project Director, Elara

Tenth Deed of Variation to Elara Marsden Park Planning Agreement

Under cl 203(5) of the *Environmental Planning and Assessment Regulation 2021*

Parties

Blacktown City Council ABN 18 153 831 768 of 62 Flushcombe Rd, Blacktown NSW 2148 (Council)

and

Stockland Development Pty Limited ABN 71 000 064 835 of Level 25, 133 Castlereagh Street, Sydney NSW 2000 (Developer)

Background

A The Developer and Council are parties to the Planning Agreement and the Channel TC02 Works WIK Agreement.

B The Parties have agreed to amend the Planning Agreement as set out in this Deed.

C The amendment to the Planning Agreement also effects an amendment to the Channel TC02 Works WIK Agreement.

Operative provisions

Part 1 - Preliminary

1 Interpretation

1.1 In this Deed the following definitions apply:

Deed means this Deed and includes any schedules, annexures and appendices to this Deed.

Party means a party to this Deed.

Planning Agreement means the Elara Marsden Park Planning Agreement pursuant to s7.4 of the Act entered into between the Parties on 22 December 2014 and as varied by:

- the First Deed of Variation to the Elara Marsden Park Planning Agreement dated 8 February 2016;
- the Second Deed of Variation to the Elara Marsden Park Planning Agreement dated 27 February 2017;
- the Third Deed of Variation to the Elara Marsden Park Planning Agreement dated 26 June 2017;
- the Fourth Deed of Variation to the Elara Marsden Park Planning Agreement dated 16 March 2018;
- the Fifth Deed of Variation to the Elara Marsden Park Planning Agreement dated 11 April 2019;
- the Sixth Deed of Variation to the Elara Marsden Park Planning Agreement dated 11 April 2019;
- the Seventh Deed of Variation to the Elara Marsden Park Planning Agreement dated 3 May 2019;
- the Eighth Deed of Variation to the Elara Marsden Park Planning Agreement dated 11 September 2019;
- the Ninth Deed of Variation to the Elara Marsden Park Planning Agreement dated 11 September 2019.

1.2 Except as provided by clause 1.1, all capitalised words used in this Deed that are defined in clause 1.1 of the Planning Agreement have the same meaning as in the Planning Agreement.

1.3 Clauses 1.2, 43, 44 - 48 and 49 of the Planning Agreement apply as if they form part of this Deed with any necessary changes.

2 Status of this Deed

2.1 This Deed is an amendment to the Planning Agreement within the meaning of clause 203(5) of the Regulation.

2.2 This Deed is not a planning agreement within the meaning of s7.4(1) of the Act.

3 Commencement

3.1 This Deed commences and has force and effect on the date when the Parties have:

3.1.1 both executed the same copy of this Deed, or

3.1.2 each executed separate counterparts of this Deed and exchanged the counterparts.

3.2 The Party who executes this Deed last is to insert on the front page the date they did so and provide a copy of the fully executed and dated Deed to any other person who is a Party.

4 Warranties

4.1 The Parties warrant to each other that they:

4.1.1 have full capacity to enter into this Deed, and

4.1.2 are able to fully comply with their obligations under this Deed and the Planning Agreement as modified by this Deed.

5 Amendment to Planning Agreement

5.1 On and from the date this Deed takes effect the Planning Agreement is amended in accordance with the marking-up shown on the copy of the Planning Agreement contained in Schedule 1.

6 Costs

6.1 The Developer is to pay to the Council the Council's reasonable costs of preparing, negotiating, executing and stamping this Deed, and any document related to this Deed within 7 days of a written demand by the Council for such payment.

7 Explanatory Note

7.1 The Appendix contains the Explanatory Note relating to this Deed required by clause 205 of the Regulation.

7.2 Pursuant to clause 205(5) of the Regulation, the Parties agree that the Explanatory Note is not to be used to assist in construing this Deed.

Schedule 1

(Clause 5.1)

Amended Planning Agreement

The Planning Agreement as amended by this Deed appears on the following pages.

Deed

Elara, Marsden Park

Planning Agreement

Under s7.4 of the *Environmental Planning and Assessment Act 1979*

Blacktown City Council

Stockland Development Pty Limited

Date:

Elara, Marsden Park Planning Agreement

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Elara, Marsden Park Planning Agreement

Summary Sheet

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Address: 62 Flushcombe Rd, Blacktown NSW 2148

Telephone: (02) 9839 6461

Email: council@blacktown.nsw.gov.au

Representative: Dennis Bagnall

Developer:

Name: Stockland Development Pty Limited

Address: Level 25, 133 Castlereagh Street, Sydney NSW 2000

Telephone: (02) 9035 2000

Email: Mike.Milligan@stockland.com.au

Representative: Project Director, Elara

Land:

See definition of *Land* in clause 1.1.

Development:

See definition of *Development* in clause 1.1.

Development Contributions:

See Clause 10 and Schedule 1.

Application of s7.11, s7.12 and s7.24 of the Act:

See clause 8.

Security:

See Part 4.

Registration:

See clause 36~~32~~.

Restriction on dealings:

See clause 37~~33~~.

Dispute Resolution:

See Part 3.

DA Schedule

Schedule 9

Precinct	Stage	Number of Final Lots	Cumulative Final Lots	Superlots	Residual Lots	Development Application Reference
Precinct 1	1 – 4 and 11	240	240	7	4	13-2051
Precinct 1	5 – 10	237	477	-	-	13-2519
Precinct 1	MD4	52	529	-	-	DA15 – 00746
Precinct 1	MD1 – 3	173	702	-	-	15-2269, 15-2268 and 15-2270
Precinct 1	12 and 12A	69	771	3	2	14-1498
Precinct 1	12B	14	785	-	1	16-4697
Precinct 1	13 and 14	105	890	-	-	14-2557

Precinct	Stage	Number of Final Lots	Cumulative Final Lots	Superlots	Residual Lots	Development Application Reference
Precinct 2	15 – 23	635	1525	2	4	JRPP15-1997
Precinct 4	24~~, 24A~~, 25 and 26	275	1800	3	11	DA-15-02897
Precinct 5a	39 and 40	255	~~2055~~2,055	-	1	JRPP15-2324
Precinct 3	27 – 32 including Stage 30A	3~~4~~82	2,4~~0~~37	10	2	DA-16-05045
Precinct 3a	33 and 34	14~~1~~6	2,~~549~~553	7	7	DA-17-00404
Precinct 3a	33A	13	2,566	-	-	DA-20-00465
Precinct 5b	41, 42, 43 and 44	40~~3~~2	~~2952~~2,968	-	-	JRPP15-2324
Precinct 6	45-53, MD7~~,~~ ~~MD8~~ and MD9	~~945~~873	3,~~897~~841	-	-	SPP-17-00044, DA-18-00017, ~~SPP-18-00002~~, DA-18-00019
Precinct 3	MD5 Stage 1, MD5 Stage 2, MD6	135	~~4,032~~3,976	-	-	DA-18-00020, SPP-18-00001, DA-18-00018, MOD-19-00071
Precinct 1	37	49	4,~~081~~025	-	-	DA-17-01941
Precinct 5b	42a	20	4,045	0	0	DA-20-01870
Precinct 5b	42a	7	4,052	0	0	DA-20-02093
Precinct 5b	44A	80	4,~~161~~132	-	-	DA-17-02362
Precinct 6	51A	42	4,174	0	0	DA-20-02086

Precinct	Stage	Number of Final Lots	Cumulative Final Lots	Superlots	Residual Lots	Development Application Reference
Precinct 1	36	51	4,225~~4,211~~	-	-	~~Development Application~~ DA-18-02461 ~~lodged, but not yet approved as at the date of this Deed~~
Precinct 3	27A	2	4,227	-	-	DA19-0548
Precinct 7	7	188	4,415	11	4	DA-21-02068
Precinct 4	24A West	8	4,423	-	-	DA-20-01973
Precinct 5b	41A	9	4,432	-	-	DA-21-02006

The parties acknowledge that Development Applications for some of the stages specified in the above schedule has not yet been determined and the number of Final Lots for each of those stages will be subject to Development Consent.

Elara, Marsden Park Planning Agreement

Under s7.4 of the *Environmental Planning and Assessment Act 1979*

Parties

Blacktown City Council ABN 18 153 831 768 of 62 Flushcombe Rd, Blacktown NSW 2148 (Council)

and

Stockland Development Pty Limited ABN 71 000 064 835 of Level 25, 133 Castlereagh Street, Sydney NSW 2000 (Developer)

Background

A The Developer has lodged Development Applications for the Development and intends to lodge the Future Development Applications.

B The Developer agrees to make the Development Contributions set out in this Deed in connection with the carrying out of the Development and intends to amend this Deed from time to time to include the provision of further Development Contributions, such as the Reserve 1000 Works.

C Under this Deed, the Developer is required to carry out the collector road component of the Garfield Road West Extension and will obtain an '*offset entitlement'* under this Deed in the amount of the contribution value of that work as recognised in the Council's CP 21 Contributions Plan.

D The Developer has separately entered into a planning agreement with the Minister for Planning for the construction of the sub-arterial component of the Garfield Road West Extension and will be entitled to an offset in respect of its obligation to pay special infrastructure contributions to the Minister to the value of the sub-arterial component of the road works.

Operative provisions

Part 1 - Preliminary

1 Interpretation

1.1 In this Deed the following definitions apply:

Act means the *Environmental Planning and Assessment Act 1979* (NSW).

Additional Land Dedication Plan means the plan in Schedule 16.

Agreed Final Lot Contribution means in respect of each Final Lot for which Development Consent is granted during the period specified in Column 1 of the table below, the amount specified in Column 2 of the table:

Column 1	**Column 2**
The period up to and including 31 December 2017	$30,000 per Final Lot
1 January 2018 up to and including 30 June 2018	$35,000 per Final Lot or the Final Lot contribution identified in the Contributions Plan applicable to the Final Lot, whatever is the lesser.
1 July 2018 up to and including 30 June 2019	$40,000 per Final Lot or the Final Lot contribution identified in the Contributions Plan applicable to the Final Lot, whatever is the lesser.
1 July 2019 up to and including 30 June 2020	$45,000 per Final Lot or the Final Lot contribution identified in the Contributions Plan applicable to the Final Lot, whatever is the lesser.
On and from 1 July 2020	(a) $45,000 per Final Lot or the Final Lot contribution identified in the Contributions Plan applicable to the Final Lot, whatever is the lesser, unless (b) applies (b) If the Contributions Plan is an IPART Reviewed Contributions Plan, then an amount determined in accordance with the Contributions Plan per Final Lot

Approval includes approval, consent, Development Consent, licence, permission or the like.

Assignment Deed means the deed substantially in the form attached at Schedule 10.

Authority means the Commonwealth or New South Wales government, a Minister of the Crown, a government department, a public authority established by or under any Act, a council or county council constituted under the *Local Government Act 1993* (NSW), or a person or body exercising functions under any Act including a commission, panel, court, tribunal and the like.

Bank Guarantee means an irrevocable and unconditional undertaking without any expiry or end date in favour of the Council to pay an amount or amounts of money to the Council on demand issued by:

(a) one of the following trading banks:

(i) Australia and New Zealand Banking Group Limited,

(ii) Commonwealth Bank of Australia,

(iii) Macquarie Bank Limited,

(iv) National Australia Bank Limited,

(iv) St George Bank Limited,

(v) Westpac Banking Corporation, or

(b) any other financial institution approved by the Council in its absolute discretion.

Basin 5 and Channel TC06 means the water management works located on the Basin 5 and Channel TC06 Land marked as '*Proposed Lot 165'* on the Land Dedication Plans and shown on the Basin 5 and Channel TC06 Plan as varied by the terms of any Approval.

Basin 5 and Channel TC06 Dog Park Works has the meaning given to that expression in clause 13.9.1.

Basin 5 and Channel TC06 Land means the land shown shaded in yellow and marked as '*Drainage Reserve Proposed Lot 165*' on the Land Dedication Plans with an approximate area of 4.3266ha.

Basin 5 and Channel TC06 Plan means the plan in Schedule 3.

Bus Shelters means bus shelters identified in '*Appendix D3 of 3'* in the CP 21 Contributions Plan.

Business Premises has the same meaning as business premises in the Growth Centres SEPP.

Channel MS1.12 Works means the water management works identified in "*Appendix C13 of 15"* in the CP 21 Contributions Plan, as varied by any Approval.

Channel TC01 Land means the land identified as site numbers ML1.12, ML1.15 and ML1.18 in '*Appendix C9 of 15'* of the CP 21 Contributions Plan and identified as such on the Water Management Land Plan being land contained in the following folio identifiers which have been created from the subdivision of the Land:

(a) ML1.12 is contained in Lot 13 DP1239531;
(b) ML1.15 is contained in Lot 15 DP1239531; and
(c) ML1.18 is contained in Lot 17 DP1239531.

Channel TC01 Works means the water management works (being civil works and embellishment works) identified in *'Appendix C9 of 15'* of the CP 21 Contributions Plan, and in the locations shown on the Water Management Land Plan, as:

(a) ML1.7 (which, as at the date of this Deed, is not owned by the Developer);
(b) ML1.12 (which is located on the Channel TC01 Land);
(c) ML1.15 (which is located on the Channel TC01 Land); and
(d) ML1.18, (which is located on the Channel TC01 Land,

as varied by any Approval.

Channel TC02 Land means the land identified as site ML1.22 in *'Appendix C9 of 15'* of the CP 21 Contributions Plan and identified as such on the

Water Management Land Plan being land contained in part of Lot 9 DP1239531 (which has been created from the subdivision of the Land).

Channel TC02 Works means water management works located on the Channel TC02 Land the subject of the Channel TC02 Works WIK Agreement.

Channel TC02 Works WIK Agreement means the agreement entered into between the Council and the Developer for the construction by the Developer of the Channel TC02 Works dated 28 September 2018 and attached at Schedule 12.

Channel Works TC06 (Delayed Works) Land (near MD2) – Precinct 1 Stage 1 means the land identified as Lot 172 DP1191299 SP2 land on the Additional Land Dedication Plan with an approximate area of 8,531m^2.

Child Care Facility has the same meaning as Child Care Facility in the Growth Centres SEPP.

Claim includes a claim, demand, remedy, suit, injury, damage, loss, Cost, liability, action, proceeding or right of action.

Co-Located Open Space Works means the passive open space and recreation facilities embellishment works co-located with the Detention Basin 3 Works and the Channel TC01 Works identified in *'Appendix E2 of 4'* and *'Appendix E4 of 4'* of the CP 21 Contributions Plan of the CP 21 Contributions Plan as:

(a) "Reserve E" and contained in Lot 3 in DP1232886 (which, as at the date of this Deed, is not owned by the Developer); ~~and~~
(b) "Reserve F" and contained in Lot 7 in DP1232886 (which, as at the date of this Deed, is not owned by the Developer~~),~~); and
(c) ~~and~~ the Reserve 1000 Works,

as shown on the Reserves Plan.

Commercial Premises has the same meaning as commercial premises under the Growth Centres SEPP.

Completed or **Complete** means completed so that the Works (or part of) may be used for their intended purpose except for minor defects and omissions.

Construction Certificate has the same meaning as in the Act.

Contributions Plan means a contributions plan approved under Subdivision 3, Division 7.1 of Part 7 of the Act.

Contribution Value means:

(a) in respect of a Work to be carried out by the Developer under this Deed, the $ amount set out in Column 5 of the Table in Schedule 1 corresponding to the Work,

(b) in respect of Dedication Land, the $ amount set out in Column 5 of the Table in Schedule 1 corresponding to that land, but only on and from the earlier of:

(i) the date this Deed is registered on the title to that land; or

(ii) the date upon which all of the following have occurred:

1. the Developer has made an application for a Subdivision Certificate to create the Dedication land as a separate lot,
2. The Developer has satisfied all the preconditions to the issuing of a Subdivision Certificate required under the Act and the Regulation,
3. The Developer has delivered to the Council all the documents referred to in clause 32 of this Deed in respect of the Dedication Land.

Cost means a cost, charge, expense, outgoing, payment, fee and other expenditure of any nature.

CP21 Contributions Plan means the Contributions Plan applicable to the Land titled '*Contributions Plan No.21'.*

Culvert Crossings Land means the land for the proposed culvert crossings under future roads shown as site numbers ML1.13, ML1.16 and ML1.19 in *'Appendix C9 of 15'* of the CP 21 Contributions Plan and identified as such on the Water Management Land Plan being land contained in the following folio identifiers which have been created from the subdivision of the Land:

~~;~~

(a) ML1.13 is contained in Lot 14 DP1239531;
(b) ML1.16 is contained in Lot 16 DP1239531; and
(c) ML1.19 is contained in Lot 18 DP1239531.

Culvert Crossings Works means the water management works identified in *'Appendix C9 of 15'* of the CP 21 Contributions Plan, and in the locations shown on the Water Management Works Plan, as:

(a) ML1.16 (which is located on the Culvert Crossings Land);
(b) ML1.19 (which is located on the Culvert Crossings Land), and

as varied by any Approval.

Culvert MS1.10 Works means the water management works identified as MS1.10 in "*Appendix C13 of 15*" in the CP 21 Contributions Plan in the locations shown on the Water Management Works Plan, as varied by any Approval.

Dedication Land means that land identified in Section B of Schedule 1.

Deed means this Deed and includes any schedules, annexures and appendices to this Deed.

Defect means anything that adversely affects, or is likely to adversely affect, the appearance, structural integrity, functionality or use or enjoyment of a Work or any part of a Work.

Defects Liability Period means the period of 1 year commencing on the day immediately after a Work is completed for the purposes of this Deed.

Detention Basin 3 Land means the land for the proposed Detention Basin 3 shown as site ML1.0 in '*Appendix C9 of 15'* of the CP 21 Contributions Plan and as identified on the Water Management Land Plan and contained in Lot 3 DP1232886 which as at the date of this Deed, is located on land that is not owned by the Developer.

Detention Basin 3 Works means the water management works (being civil works and embellishment works) identified in *'Appendix C9 of 15'* and *'Appendix C11 of 15'* of the CP 21 Contributions Plan to be carried out on the Detention Basin 3 Land and shown in the location shown on the Water Management Land Plan and the Water Management Works Plan as ML1.0 and ML1.1 (which are both located on land, which as at the date of this Deed, is not owned by the Developer), as varied by any Approval.

Development means the subdivision of the Land into:

(a) approximately 4,~~211~~432 Final Lots, various residual lots, Super Lots and associated works as approved by Development Consent to the Staged DAs; and

(b) Final Lots as approved by Development Consent to a Future Development Application,

as modified from time to time.

Development Application has the same meaning as in the Act.

Development Consent has the same meaning as in the Act.

Development Contribution means a monetary contribution, the dedication of land free of cost, the carrying out of work, or the provision of any other material public benefit, or any combination of them, to be used for, or applied towards a public purpose, but does not include any Security or other benefit provided by a Party to the Council to secure the enforcement of that Party's obligations under this Deed for the purposes of s7.4(3)(g) of the Act.

Dog Park Plan means the plan at Schedule 18.

Dispute means a dispute or difference between the Parties under or in relation to this Deed.

Educational Establishment has the same meaning as Educational Establishment in the Growth Centres SEPP.

Equipment means any equipment, apparatus, vehicle or other equipment or thing to be used by or on behalf of the Developer in connection with the performance of its obligations under this Deed.

Final Lot means a lot created in the Development for separate residential occupation and disposition or a lot of a kind or created for a purpose that is otherwise agreed by the Parties, not being a lot created by a subdivision of the Land:

(a) that is to be dedicated or otherwise transferred to the Council, or

(b) on which is situated a dwelling-house that was in existence on the date of this Agreement.

Future Development Application means a Development Application for subdivision of any part of the Development:

(a) including the subdivision of any Super Lot into Final Lots;

but

(b) excluding that part of the Development approved by Development Consent to the Staged DAs; and

(c) excluding any Development Applications relating to retail development, earthworks, civil works or similar.

Gross Pollutant Traps (Eastern Channel) Works means the gross pollutant trap works identified in '*Appendix C14 of 15*' of the CP 21 Contributions Plan and identified on the Water Management Plan as MS1.8, as varied by any Approval.

Gross Pollutant Traps (Western Channel) Works means the gross pollutant trap works identified in '*Appendix C14 of 15'* of the CP 21 Contributions Plan and identified on the Water Management Plan as MS1.9, as varied by any Approval.

Gross Pollutant Trap MS1.11 Works means the gross pollutant trap works identified in "*Appendix C15 of 15"* in the CP 21 Contributions Plan and identified on the Water Management Works Plan as MS1.11, as varied by any Approval.

Gross Pollutant Trap Works means the gross pollutant trap works identified in "*Appendix C11 of 15"* in the CP 21 Contributions Plan, and in the locations shown on the plan at "*Appendix C10 of 15*" in the CP 21 Contributions Plan, and in the locations shown on the Water Management Works Plan, as:

(a) ML1.8;
(a) ML1.11;
(b) ML1.14; and
(c) ML1.17,

as varied by any Approval.

Growth Centres SEPP means the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006.*

GRWE Road Works means the traffic and transport management facilities work identified as MP1.2 in "*Appendix D2 of 3*" in the CP 21 Contributions Plan and in the location shown on the plan at "*Appendix D1 of 3*" in the CP 21 Contributions Plan and in the location shown on the Traffic Management Facilities Plan, as varied by any Approval.

GST has the same meaning as in the GST Law.

GST Law has the same meaning as in *A New Tax System (Goods and Services Tax) Act 1999* (Cth) and any other Act or regulation relating to the imposition or administration of the GST.

Independent Certifier means the independent certifier nominated under clause 21 or 22 suitably qualified and experienced to certify the Work having no current involvement with the project management, design and/or superintendency of the Work on behalf of the Developer.

Independent Quantity Surveyor means the independent quantity surveyor nominated under clause 14 suitably qualified and experienced to carry out the quantity surveying work and having no current involvement with the project management, design and/or superintendency of the Work on behalf of the Developer.

IPART means Independent Pricing and Regulatory Tribunal.

IPART Reviewed Contributions Plan has the same meaning as in direction given by the Minister under s7.17 of the Act on 17 July 2017.

Item means an item specified in Column 1 of Schedule 1.

Just Terms Act means the *Land Acquisition (Just Terms Compensation) Act 1991*.

Land means Lots 111, 112 and 113 in Deposited Plan 1190510, Lot 6 in Deposited Plan 235714 and Lots 3 and 4 in Deposited Plan 1191653, Lot 2 in Deposited Plan 235714, Lot 166 in Deposited Plan 1191299, Part Lot 1 in Deposited Plan 235714, Lot 1392 in Deposited Plan 1205498, ~~and~~ Lot 1 and 2 Deposited Plan 1225885~~.~~, Lots 3 and 4 in Deposited Plan 1270086 and Lots 113, 1134 and 1135 in Deposited Plan 1254249.

Land Dedication Plans means the plan in Schedule 2.

LGA means the Blacktown City Council Local Government Area.

Local Park means the park on the Local Park Land as shown on the Local Park Plan as varied by the terms of any Approval.

Local Park Land means the land shown shaded in green and marked as '*Proposed Lot 1054 Local Park*' on the Land Dedication Plans with an approximate area of 6281m2.

Local Park Plan means the plan in Schedule 5.

Local Road Culvert Crossing MP10.6 means the traffic and transport management facility work identified as MP10.6 in "*Appendix D3 of 3*" in the CP 21 Contributions Plan and as shown on the Traffic Management Facilities Plan comprising the work shown on the plan at "*Appendix D1 of 3*" in the CP 21 Contributions Plan, as varied by any Approval

Local Road Culvert Crossing MP10.7 means the traffic and transport management facility work identified as MP10.7 in "*Appendix D3 of 3*" in the CP 21 Contributions Plan and as shown on the Traffic Management Facilities Plan comprising the work shown on the plan at "*Appendix D1 of 3*" in the CP 21 Contributions Plan, as varied by any Approval.

Maintain, in relation to a Work, means keep in a good state of repair and working order, and includes repair of any damage to the Work to the reasonable satisfaction of Council.

Maintenance Period:

(a) in relation to a Work for the purpose for traffic and transport management means a period of 6 months from the date the Work is taken to be completed for the purposes of this Deed,
(b) in relation to a Work for the purpose of open space means a period of 12 months from the date the Work is taken to be completed for the purposes of this Deed,
(c) in relation to a Work for the purpose of drainage and riparian open space means a period of 24 months from the date the Work is taken to be completed for the purposes of this Deed, and
(d) in relation to any other Work means a period of 24 months from the date the Work is taken to be completed for the purposes of this Deed.

Maintenance Security for a Work means Security in an amount equal to 5% of the Contribution Value of the Work.

Marsden Park Precinct has the same meaning as in the Growth Centres SEPP.

Monetary Security means a Security provided by the Developer under clause 12.2.

Office Premises has the same meaning as office premises in the Growth Centres SEPP.

Offset Entitlement means the amount calculated using the following formula, reduced in accordance with clause 11.2:

OE = SCVNM – (AFLC x TFLP1)

Where:

OE	means the Offset Entitlement
SCVNM	means the sum of the Contribution Values, (as amended in accordance with clause ~~14)~~17) of non-monetary Development Contributions made (including any early completion of that non-monetary Development Contribution) as at the date the offset is sought to be made
AFLC	means the Agreed Final Lot Contribution
TFLP1	means the total number of Final Lots created in the Development as at the date the offset is sought to be made.

Organised Sports Facilities means the main carpark and the clubhouse as shown on the Sporting Field Plan and any flood lighting to be installed on the Sporting Field Land as varied by the terms of any Approval.

Party means a party to this Deed.

Permitted Encumbrance means any encumbrances, including easements and restrictions on use:

(a) in favour of utility service providers;
(b) required by any Authority; or
(c) requested by the Developer which are reasonably necessary for the Development as agreed in writing by the Council, acting reasonably and promptly and having regard to the intended use and purpose of the Dedication Land.

Plan of Subdivision means a registered plan of subdivision within the meaning of the section 195 of the *Conveyancing Act 1919* (NSW).

Precinct means a precinct of the Development comprising of one or more Stages as specified in Schedule 9 and identified as such on the Precincts Plan.

Precincts Plan means the plan in Schedule 6.

Principal Contractor means the person defined as the Principal Contractor under the *Work Health and Safety Act 2011* (NSW) or *Work Health and Safety Regulation 2017* (NSW) or an equivalent under Commonwealth work health and safety laws.

Rectification Notice means a notice in writing:

(a) identifying the nature and extent of a Defect,

(b) specifying the works or actions that are required to Rectify the Defect,

(c) specifying the date by which or the period within which the Defect is to be rectified.

Rectify means rectify, remedy or correct.

Regulation means the *Environmental Planning and Assessment Regulation 2000* (NSW).

Reserve 990 Land means the land identified in '*Appendix E2 of 4'* of the CP 21 Contributions Plan as reserve number 990 and as shown on the Reserves Plan with an approximate area of 0.4817 Ha and contained in Lot 111 in DP1190510, which forms part of the Land.

Reserve 990 Works means the open space and recreation facilities works on the Reserve 990 Land and identified in *'Appendix E3 of 15'* of the CP 21 Contributions Plan, as varied by any Approval..

Reserve 995 Land means the land identified in '*Appendix E3 of 4*' of the CP 21 Contributions Plan, as reserve number 995 comprising part Lot 31 DP1233692 RE1 land above 17.3m on the Additional Land Dedication Plan with an approximate area of 52,595m^2.

Reserve 995 Works means the open space embellishment items including active reserve with playing fields, playground and landscaping included in the 2016 CP 21 Contributions Plan on the Reserve 995 Land and identified in the Reserve 995 Works Plan.

Reserve 995 Works Plan means the plan in Schedule 17.

Reserve 1000 Land means the land identified in '*Appendix E2 of 4'* of the CP 21 Contributions Plan and as shown on the Reserves Plan as reserve number 1000 with an approximate area of 7,471m^2 and contained in Lot 19 in DP1239531, which forms part of the Land.

~~**Reserves Plan** means the plan in **Schedule 13.**~~

~~**Reserve 990 Works** means the open space and recreation facilities works on the Reserve 990 Land and identified in *'Appendix E3 of 15'* of the CP 21 Contributions Plan.~~

Reserve 1000 Works means the open space and recreation facilities works on the Reserve 1000 Land and identified in *'Appendix E3 of ~~15'~~4'* of the CP 21 Contributions Plan, as varied by any Approval.

Reserve C Works means the pathway, landscaping and seating area works co-located within the part of Drainage Basin MM 2.0 identified in '*Appendix E4 of 4*' of the CP 21 Contributions Plan which is owned by the Developer, as varied by any Approval.

Reserve D Works means the pathway, landscaping and seating area works and civil works co-located within the part of Drainage Basins MS 1.5 to MS1.7 identified in '*Appendix E4 of 4*' of the CP 21 Contributions Plan which is owned by the Developer, as varied by any Approval.

Reserves Plan means the plan in **Schedule 13.**

Residential Accommodation has the same meaning as residential accommodation under the Growth Centres SEPP.

Retail Premises has the same meaning as retail premises under the Growth Centres SEPP.

Roundabout Works – Precinct 1 Local Park means the miscellaneous traffic and transport management facilities works identified in '*Appendix D1 of 3*' in the CP 21 Contributions Plan within Precinct 1 of the Development.

Roundabout Works Precinct 5 Stage 42 means the miscellaneous traffic 1and transport management facilities works identified in '*Appendix D1 of 3*' in the CP 21 Contributions Plan within Precinct 5 Stage 42 of the Development.

Roundabout Works Precinct 6 Stage 51 means the miscellaneous traffic and transport management facilities works identified in '*Appendix D1 of 3*' in the CP 21 Contributions Plan within Precinct 6 Stage 51 of the Development.

Security means a Bank Guarantee, or a bond or other form of security to the satisfaction of the Council indexed from the date of this Deed in accordance with the *Consumer Price Index (All Groups – Sydney)* published by the Australian Bureau of Statistics, except that any Monetary Security provided under clause 12 is not to be indexed.

SIC Determination means a determination made by the Minister for Planning under section 7.23 of the Act to require a Special Infrastructure Contribution to be paid in relation to the Land.

Specifications means the document titled '*Works Specification Civil - 2005'* prepared by the Council or any document that replaces that document and the specifications for the Works set out in Schedule 7 as approved by Development Consent, and as varied by clause 15.

Sporting Field means the sporting field and other items on the Sporting Field Land as shown on the Sporting Field Plan excluding the Organised Sports Facilities as varied by the terms of any Approval.

Sporting Field Land means the land shown shaded in green and marked as '*Proposed Lot 1103 Sporting Field*' on the Land Dedication Plans with an approximate area of 4.827ha.

Sporting Field Plan means the plan in Schedule 4.

Stage 1 GRWE Road Works means the part of the GRWE Road Works comprising a single eastbound carriage way, all intersections and full road reserve.

Stage 2 GRWE Road Works means the part of the GRWE Road Works comprising a single westbound carriageway.

Stage means a stage of the Development approved by a Development Consent as specified in Schedule 9 and identified with a number on the Precincts Plan, or otherwise approved in writing by the Council for the purposes of this Deed.

Staged DAs means the Development Applications specified in Schedule 9 for the Precincts and Stages specified in that Schedule and identified on the Precincts Plan.

Subdivision Certificate has the same meaning as in the Act.

Surplus Credit means the amount calculated using the following formula:

SC = SCV – (TFL x AFLC)

Where:

SC means the Surplus Credit

SCV means the sum of all Contribution Values

TFL means the total number of Final Lots created in the Development

AFLC means the Agreed Final Lot Contribution

Super Lot means a lot that forms part of the Development which, following the registration of a Plan of Subdivision, is intended for further subdivision (including strata and community title subdivision):

(a) for Residential Accommodation; or
(b) to be used for Retail Premises, Office Premises, Business Premises, Educational Establishment or Child Care Facility.

Supervision Fee means an amount equal to the lesser of:

(a) 3% of the sum of all Contribution Values; and
(b) ~~60~~$100,000 (ex GST)

Traffic Management Facilities Plan means the plan in Schedule 14.

TC03 Works means the water management works identified in '*Appendix C12 of 15*' of the CP 21 Contributions Plan and in the locations shown on the Water Management Works Plan as MS1.7, as varied by any Approval.

TC04 Works means the water management works identified in '*Appendix C12 of 15*' of the CP 21 Contributions Plan and in the locations shown on the Water Management Works Plan as MS1.6, as varied by any Approval.

Water Management Land (flood) means the land identified as part of Lot 31 DP1233692 SP2 land below 17.3m on the Additional Land Dedication Plan with an approximate area of 117m^2

Water Management Land (flood free) means the land identified as part of Lot 31 DP1233692 SP2 land above 17.3m on the Additional Land Dedication Plan with an approximate area of 12,268m^2.

Water Management Land Plan means the plan in Schedule 11.

Water Management Works Plan means the plan in Schedule 15.

WHS Law means the *Work Health and Safety Act 2011* (NSW) and *Work Health and Safety Regulation 2017*(NSW), and any other regulations made under that Act.

Work means the physical result of any building, engineering or construction work in, on, over or under land.

Work Security means that Security as referred to and defined in clause ~~28~~32.2.

1.2 In the interpretation of this Deed, the following provisions apply unless the context otherwise requires:

1.2.1 Headings are inserted for convenience only and do not affect the interpretation of this Deed.

1.2.2 A reference in this Deed to a business day means a day other than a Saturday or Sunday on which banks are open for business generally in Sydney.

1.2.3 If the day on which any act, matter or thing is to be done under this Deed is not a business day, the act, matter or thing must be done on the next business day.

1.2.4 A reference in this Deed to dollars or $ means Australian dollars and all amounts payable under this Deed are payable in Australian dollars.

1.2.5 A reference in this Deed to a $ value relating to a Development Contribution is a reference to the value exclusive of GST.

1.2.6 A reference in this Deed to any law, legislation or legislative provision includes any statutory modification, amendment or re-enactment, and any subordinate legislation or regulations issued under that legislation or legislative provision.

1.2.7 A reference in this Deed to any agreement, deed or document is to that agreement, deed or document as amended, novated, supplemented or replaced.

1.2.8 A reference to a clause, part, schedule or attachment is a reference to a clause, part, schedule or attachment of or to this Deed.

1.2.9 An expression importing a natural person includes any company, trust, partnership, joint venture, association, body corporate or governmental agency.

1.2.10 Where a word or phrase is given a defined meaning, another part of speech or other grammatical form in respect of that word or phrase has a corresponding meaning.

1.2.11 A word which denotes the singular denotes the plural, a word which denotes the plural denotes the singular, and a reference to any gender denotes the other genders.

1.2.12 References to the word ‘include’ or ‘including’ are to be construed without limitation.

1.2.13 A reference to this Deed includes the agreement recorded in this Deed.

1.2.14 A reference to a Party to this Deed includes a reference to the servants, agents and contractors of the Party, the Party’s successors and assigns.

1.2.15 A reference to ‘dedicate’ or ‘dedication’ in relation to land is a reference to dedicate or dedication free of cost.

1.2.16 Any schedules, appendices and attachments form part of this Deed.

2 Status of this Deed

2.1 This Deed is a planning agreement within the meaning of s7.4(1) of the Act.

3 Commencement

3.1 This Deed takes effect on the date when all Parties have executed this Deed.

3.2 The Party who executes this Deed last is to insert on the front page the date they did so and provide a copy of the fully executed and dated Deed to any other person who is a Party.

4 Application of this Deed

4.1 This Deed applies to the Land and to the Development.

5 Warranties and Ownership of Land

5.1 The Parties warrant to each other that they:

5.1.1 have full capacity to enter into this Deed, and

5.1.2 are able to fully comply with their obligations under this Deed.

5.2 The Developer warrants that it is the registered proprietor of the Land.

6 Further agreements

6.1 The Parties may, at any time and from time to time, enter into agreements relating to the subject-matter of this Deed that are not inconsistent with this Deed for the purpose of implementing this Deed.

7 Surrender of right of appeal, etc.

7.1 The Developer is not to commence or maintain, or to cause or procure the commencement or maintenance, of any proceedings in any court or tribunal or similar body appealing against, or questioning the imposition of a condition in a Development Consent:

7.1.1 under section 7.7(3)(a) of the Act requiring the Developer to enter into this Deed; or

7.1.2 a condition requiring the Developer to perform its obligations under this Deed.

8 Application of s7.11, s7.12 and s7.24 of the Act to the Development

8.1 This Deed excludes the application of s7.11 and s7.12 of the Act to the Development.

8.2 This Deed does not exclude the application of s7.24 of the Act to the Development.

9 Application of Surplus Credit

9.1 If any Surplus Credit exists at the completion of the Development and the Developer is not in breach of this Deed, the Developer may notify the Council in writing that:

9.1.1 it wishes to apply the Surplus Credit towards the satisfaction of an obligation of the Developer (or its nominee) to make monetary Development Contributions in respect of development on land elsewhere in the Marsden Park Precinct other than the Development, or

9.1.2 it wishes to apply the Surplus Credit towards the satisfaction of an obligation of the Developer (or its nominee) to make monetary Development Contributions in respect of development on land in the Council's local government area other than the Marsden Park Precinct, or

9.1.3 it requires the Council to pay the Surplus Credit to it.

9.2 A Surplus Credit may be applied towards satisfaction of an obligation of the Developer's nominee:

9.2.1 in respect of an application under clause 9.1.1, where the Developer has, at no cost to the Council, first procured the execution of the Assignment Deed by the person to whom the Surplus Credit is to be assigned (**Assignee**) and once executed by the Assignee, Council must do all things reasonably necessary to execute the Assignment Deed on the request of the Developer without unreasonable delay to signify its consent which cannot be unreasonably withheld; and

9.2.2 in respect of an application under clause 9.1.2, the Developer has, at no cost to the Council, first:

(a) obtained the Council's written agreement to the assignment of the Surplus Credit, such agreement which can be withheld or provided subject to conditions in the Council's absolute discretion but must not be unreasonably delayed, and

(b) procured the execution of the Assignment Deed by the person to whom the Surplus Credit is to be assigned.

9.3 The dispute resolution clauses of this Deed do not apply to any refusal by the Council to agree to an assignment under clause 9.2.2 or any conditions or terms required by the Council in respect of an assignment under that clause.

9.4 Subject to clause 9.5, the Council is to pay the Surplus Credit to the Developer as soon as practicable after receipt of the notice referred to in clause 9.1.3.

9.5 The Council is only required to pay the Surplus Credit to the Developer under clause 9.1.3 to the extent of:

9.5.1 any available monies held by it at the time of receiving the notice referred to in clause 9.1.1 in an account under a Contributions Plan applicable to the Land, and

9.5.2 any monies subsequently paid to it under a Contributions Plan in relation to development on land elsewhere in the Marsden Park Precinct,

being monies paid by any person towards the public facilities provided by the Developer under this Deed.

9.6 Nothing in clause 9.5 or clause 9.1.3 prevents the Developer from giving the Council more than one notice under clause 9.1.3 or withdrawing any such notice and electing to assign under clause 9.2.

Part 2 – Development Contributions

10 Provision of Development Contributions

10.1 The Developer is to make Development Contributions to the Council in accordance with Schedule 1 and any other provision of this Deed relating to the making of Development Contributions.

10.2 Any Contribution Value specified in this Deed in relation to a Development Contribution, other than a monetary Development Contribution, does not serve to define the extent of the Developer's obligation to make the Development Contribution.

10.3 The Council is to apply each Development Contribution made by the Developer under this Deed towards the public purpose for which it is made and otherwise in accordance with this Deed.

11 Offsetting monetary Development Contributions

11.1 If a monetary Development Contribution becomes payable under this Deed, and at the time it becomes payable there is an Offset Entitlement, the Developer will not be obliged to pay the monetary Development Contribution to the extent of the Offset Entitlement.

11.2 The Offset Entitlement is reduced by the sum of:

11.2.1 all the amounts of monetary Development Contributions which were not paid as a result of clause 11.1, and

11.2.2 all the amounts of Monetary Securities that have been returned to the Developer under clause 12.3.2 which secured the payment of deferred Monetary Contributions that would have otherwise been required to be paid under this Deed.

12 Payment of monetary Development Contributions

12.1 A monetary Development Contribution is made for the purposes of this Deed when the Council receives the full amount of the contribution payable under this Deed in cash or by unendorsed bank cheque or by the deposit by means of electronic funds transfer of cleared funds into a bank account nominated by the Council.

12.2 The Developer may defer payment of an amount of monetary Development Contributions required to be paid under this Deed if, prior to the time required for payment, the Developer provides the Council with Security in an amount equal to the amount of monetary Development Contributions to be deferred (**Monetary Security**). In calculating the Monetary Security amount for a Stage, regard must be had to any Offset Entitlement under clause 11.

12.3 The Council is to release and return all or part of the Monetary Security provided under clause 12.2 within 10 Business Days of the occurrence of any of the following:

12.3.1 on the payment by the Developer of the monetary Development Contribution to which the Monetary Security relates, or

12.3.2 where an Offset Entitlement arises under clause 11.

12.4 A monetary Development Contribution that has been deferred in accordance with clause 12.2 is payable prior to the last Stage in the last Precinct contemplated under the Staged DAs unless the Monetary Security relating to those monetary Development Contributions have been returned pursuant to clause 12.3.2 and in event of breach of this clause 12.4, the provisions of clause 32.8~~28.8~~ apply.

13 Dedication of land

13.1 A Development Contribution comprising the dedication of land is made for the purposes of this Agreement when:

13.1.1 a deposited plan is registered in the register of plans held with the Registrar-General that dedicates land as a public road (including a temporary public road) under the *Roads Act 1993* or creates a public reserve or drainage reserve under the *Local Government Act 1993*, or

13.1.2 the Council is given:

(a) an instrument in registrable form under the *Real Property Act 1900* duly executed by the Developer as transferor that is effective to transfer the title to the land to the Council when executed by the Council as transferee and registered,

(b) the written consent to the registration of the transfer of any person whose consent is required to that registration, and

(c) a written undertaking from any person holding the certificate of title to the production of the certificate of title for the purposes of registration of the transfer.

13.2 The Developer is to do all things reasonably necessary to enable registration of the instrument of transfer to occur.

13.3 The Developer is to ensure that land dedicated to the Council under this Deed is free of all encumbrances and affectations (whether registered or unregistered and including without limitation any charge or liability for rates, taxes and charges) except for the Permitted Encumbrances.

13.4 If, having used all reasonable endeavours, the Developer cannot ensure that land to be dedicated to the Council under this Deed is free from all encumbrances and affectations except for the Permitted Encumbrances, the Developer may request that Council agree to accept the land subject to those encumbrances and affectations, but the Council may withhold its agreement in its absolute discretion.

13.5 The Developer may, after dedication of the Dedication Land to Council under this Deed, issue a notice to Council requesting registration of a Permitted Encumbrance on the Dedication Land for the purposes of the Development and Council must consider that request in good faith.

13.6 If the Council agrees to register a Permitted Encumbrance under clause 13.5:

13.6.1 the Council is to sign all necessary documents and do all things reasonably necessary (other than payment of any Costs) to enable registration of the Permitted Encumbrance, and

13.6.2 the Developer is to pay all fees and Costs, including Council's reasonable legal costs, associated with the grant and registration of the Permitted Encumbrance, but excluding any compensation or consideration for the grant of the Permitted Encumbrance if it is in favour of a utility service provider or required by any Authority.

13.7 Subject to clause 27~~23~~, despite any other provision of this Deed, if the Developer is required to dedicate land to the Council on which the Developer is also required to carry out a Work under this Deed, the Developer is to comply with clause 13.1.2 not later than 20 Business Days after the Work is completed for the purposes of this Deed.

13.8 In the event the Developer seeks to dedicate land to the Council at or before the time the obligation arises under this Deed (and subject to clause 27~~23~~), the Council must accept that dedication of land.

13.9 The parties acknowledge and agree that:

13.9.1 the Developer will, at its cost, be undertaking works for the construction and embellishment of a dog park within the Basin 5 and Channel TC06 Land (**Basin 5 and Channel TC06 Dog Park Works**) as generally set out in the Dog Park Plan;

13.9.2 the Basin 5 and Channel TC06 Dog Park Works are not a Development Contribution required under this Deed.

13.10 To facilitate the Basin 5 and Channel TC06 Dog Park Works, the Parties agree that the Council may, by resolution under s31 of the LGA, classify the Basin 5 and Channel TC06 Land as operational land under and in accordance with the LGA.

13.11 The parties agree that in the event that the Basin 5 and Channel TC06 Land is not classified as operational land under the LGA, the parties will meet to discuss the implications of this.

14 Work Health & Safety

14.1 The Developer acknowledges that it is the Principal Contractor under WHS Law for the Works required to be carried out under this Deed (**Developer Works**) unless and until such time that the Developer:

14.1.1 engages another person to construct the Developer Works; or

14.1.2 engages another person to be the Principal Contractor for the Developer Works; and

authorises that other person to have management or control of the workplace relating to the Developer Works and to discharge the duties of a Principal Contractor under WHS Law.

14.2 Without limiting clause 14, the Developer is to engage another person to be the Principal Contractor for the Developer Works and authorise that other person to have management or control of the workplace relating to the

Developer Works and to discharge the duties of a Principal Contractor under WHS Law for any Developer Works that has an estimated construction cost of $250,000 and above.

14.3 If the Developer at any time terminates the engagement of the person engaged to construct the Developer Works or to otherwise be the Principal Contractor for the Developer Works, the Developer becomes the Principal Contractor until such time as a new person is appointed to construct the Developer Works or to otherwise be the Principal Contractor for the Developer Works.

14.4 The Developer is to use its best endeavours to ensure that all persons involved in the Developer Works, including but not limited to the person engaged as the Principal Contractor, comply with relevant WHS Law and procedures, including but not limited to:

14.4.1 following published government and industry WHS guidelines,

14.4.2 providing WHS induction training,

14.4.3 keeping and regularly updating WHS records,

14.4.4 preparing and maintaining an WHS management plan,

14.4.5 preparing a Project Safety Plan that details safety strategies, including how persons must act to comply with WHS Law,

14.4.6 providing safe work method statements for all tasks and ensuring they are complied with,

14.4.7 directing staff to take corrective action or stop work if they are not complying with the method statements or WHS Law,

14.4.8 identifying hazards and assessing risks using due diligence,

14.4.9 eliminating or controlling risks in line with WorkCover requirements using due diligence,

14.4.10 reviewing risk assessments and controlling measures,

14.4.11 providing information to employers and contractors about WHS,

14.4.12 documenting site-specific safety procedures.

14.5 The Developer is to use its best endeavours to ensure that:

14.5.1 the Council can audit, inspect and test the Developer Works without breaching WHS Law,

14.5.2 the Council can access and use the Developer Works without breaching WHS Law.

14.6 The Developer is to promptly inform the Council of any incident occurring in relation to the Developer Works where a person is injured or otherwise exposed to a risk to his or her health or safety, including, but not limited to, an incident which is required to be reported to WorkCover.

14.7 Without limiting clause 14.6 or clause 16, the Developer is to inform the Council of the following incidences within the following timeframes:

14.7.1 minor incidents or injuries – within 24 hours of the occurrence,

14.7.2 serious incidents or injuries – on the same day as the occurrence,

14.7.3 incidences where an ambulance was called – as soon as practicable.

15 Work Health & Safety Obligations

Definitions

15.1 In this clause:

Designer means a person referred to in s22(1) of the WHS Act.

Independent Safety Auditor means an independent person suitably qualified and experienced to assess compliance with the WHS Law and having no current involvement with the project management, design and/or superintendency of a Work.

Principal Contractor means a person with whom the Developer has entered into an agreement to construct, install or commission a Work required to be provided by the Developer under this Deed.

Supplier means a person referred to in s25(1) of the WHS Act.

Work means the Works required to be provided by the Developer under this Deed.

Workplace has the same meaning as in the WHS Act.

Relationship to WHS Law

15.2 In the event of any inconsistency between an obligation imposed by or under the WHS Law and an obligation imposed by this clause 15, the obligation imposed by or under the WHS Law will prevail to the extent of the inconsistency.

General obligation to comply with WHS Law

15.3 The Developer must:

15.3.1 ensure compliance with the WHS Law relating to the design of a Work, and

15.3.2 ensure, and must procure that the Principal Contractor ensures, compliance with the WHS Law relating to the supply, construction, installation or commissioning of a Work, and

15.3.3 upon receiving a request by the Council, ensure, and must procure, at its own cost, safety audits to be conducted on the Principal Contractor by an Independent Safety Auditor and provide the Council with evidence of such safety audits.

15.4 Clauses 15.5 – 15.14 apply without limiting the generality of the obligation imposed by clause 15.3 or clause 14.

Management & control of workplace where Work is to be provided

15.5 In so far as the Developer or the Principal Contractor has management or control of the Workplace where a Work is required to be provided, the Developer must ensure or procure that the Principal Contractor ensures, so far as is reasonably practicable, that the Workplace, and the means of entering and exiting the Workplace, and anything arising from the Workplace, are without risks to the health and safety of any person.

Management & control of fixtures, fittings & plant where Works are carried out

15.6 In so far as the Developer or the Principal Contractor has the management or control of fixtures, fittings or plant, in whole or in part, at a Workplace where a Work is required to be provided, the Developer is to ensure or procure that the Principal Contractor ensures, so far as is reasonably practicable, that the fixtures, fittings and plant are without risks to the health and safety of any person.

Design of Work

15.7 The Developer is to consult with the Council during the planning and design of a Work in relation to any known or foreseeable site risks.

15.8 The Developer must provide to the Council a copy of the final design of a Work, certified by the Designer, before the Work is constructed, installed or commissioned.

15.9 The Developer must ensure that the Designer of a Work ensures, so far as is reasonably practicable, that the Work is designed to be without risks to the health and safety of persons as required by the WHS Law.

15.10 Without limiting the obligation imposed by clause 15.9, the Developer must ensure that the Designer of a Work ensures that the Work is designed in accordance with the applicable provisions of the document titled '*Safe Design of Structures - Code of Practice*' dated October 2018 published by Safe Work Australia or any document which is substituted for or replaces that document.

15.11 The Developer's obligation under clause 15.9 applies irrespective of whether the design of the Work required the Council's approval or the Council was consulted in the preparation of the design.

15.12 The Developer is to provide, and must ensure that the Designer provides, to the Council:

15.12.1 adequate, current and relevant information about the design of a Work as required by the WHS Law, and

15.12.2 any other information reasonably required by the Council to ensure that the Developer and Designer's obligations under the WHS Law are being complied with.

Construction, installation & supply of Work

15.13 The Developer must ensure or procure that the Principal Contractor ensures, so far as is reasonably practicable, that the way a Work is supplied, installed, constructed or commissioned ensures that it is without risks to the health and safety of persons as required by the WHS Law.

15.14 The Developer is to provide, and must ensure or procure that the Principal Contractor provides or ensures that the Supplier of any part of a Work provides, to the Council:

15.14.1 adequate, current and relevant information about the Work as required by the WHS Law, and

15.14.2 any other information reasonably required by the Council to ensure that the obligations under the WHS Law are being complied with.

16 Accidents & dangerous occurrences

16.1 The Developer is to notify WorkCover, and the Council, as soon as it becomes aware of any serious accident or dangerous occurrence relating to the Developer Works.

16.2 Within a further 7 days, the Developer must formally notify or procure the notification of WorkCover of the accident or occurrence in accordance with the WHS Law, using any prescribed form.

16.3 The Developer must give to the Council a copy of all information and documents that have been provided to WorkCover relating to the accident or occurrence.

16.4 The Developer must also give to the Council, if requested by the Council, a written report relating to the accident or occurrence in the form specified by the Council.

16.5 The Developer must cooperate with WorkCover and the Council if the accident or occurrence is investigated by Work Cover or the Council.

16.6 The Developer must immediately give the Council a copy of any improvement or prohibition notices that WorkCover issues in relation to the Developer Works.

1417 Carrying out of Work and Contribution Value

14.117.1 Without limiting any other provision of this Deed, any Work that is required to be carried out by the Developer under this Deed is to be carried out in accordance with any design approved by Council and the Specifications (if any), any relevant Approval and any other applicable law.

14.217.2 Theif the design or Specification of a Work is varied under clause 18, the Developer may, on giving written notice to Council (**Variation Notice**), request that the Contribution Value of any of the Work/s be varied to an amount nominated by the Developer and the Developer may provide any such evidence or documentation as required to support the varied Contribution Value for the Work/s.

14.317.3 Council must, within 7 Business Days of receipt of the Variation Notice, either notify the Developer in writing that it:

~~14.3.1~~17.3.1 agrees with the varied Contribution Value for the Work/s; or

~~14.3.2~~17.3.2 disagrees with the varied Contribution Value for the Work/s and identify reasons for its disagreement.

~~14.4~~17.4 In the event that the Council disagrees with the varied amount nominated under the Variation Notice by the Developer under clause 17.2~~14.2~~:

~~14.4.1~~17.4.1 in respect of any Contribution Values relating to water management or traffic and transport management works:

(a) the parties are to meet and negotiate in good faith to reach an agreed varied amount; and

(b) failing an agreement in clause 17.4.1(a)~~14.4.1(a)~~, proceed to dispute resolution under clause 30~~26~~; or

~~14.4.2~~17.4.2 in respect of any Contribution Values relating to open space, the Developer may engage an Independent Quantity Surveyor to determine the Contribution Value of the open space Contribution Works.

~~14.5~~17.5 In the event that the Independent Quantity Surveyor is retained under clause 17.4.2~~14.4.2~~ to determine the reasonableness of the varied Contribution Value of the open space Contribution Works in a Variation Notice:

~~14.5.1~~17.5.1 both the Developer and the Council must do all things reasonably necessary to enable the Independent Quantity Surveyor to determine the dispute; and

~~14.5.2~~17.5.2 the determination by the Independent Quantity Surveyor is final and binding upon the Parties.

~~15~~18 Variation to Work

~~15.1~~18.1 The design or Specifications (if any) for any Work that is required to be carried out by the Developer under this Deed may be varied by agreement in writing between the Parties, acting reasonably, without the necessity for an amendment to this Deed

~~15.2~~18.2 Without limiting clause 18.1~~15.1~~, the:

~~15.2.1~~18.2.1 Developer may make a written request to the Council to approve a variation to the design or Specifications of a Work in order to enable it to comply with the requirements of any Authority imposed in connection with any Approval relating to the carrying out of the Work; and

~~15.2.2~~18.2.2 the Council must approve such variation where the request arises as a consequence of an Approval granted by Council.

~~15.3~~18.3 The Council is not to unreasonably delay or withhold its approval to a request made by the Developer under clause 18.2~~15.2~~.

~~15.4~~18.4 Upon any such variation to the Work under this clause 18~~15~~, the Developer may seek to vary the Contribution Value under clauses 17.2~~14.2~~ to 17.5~~14.5~~.

~~16~~19 Access to land by Developer

~~16.1~~19.1 ~~The~~Subject to compliance with clause 19.4, the Council authorises the Developer to enter, occupy and use any land owned or controlled by the Council for the purpose of performing its obligations under this Deed.

~~16.2~~19.2 ~~The~~ Subject to compliance with clause 19.4, the Council is to permit ~~the Developer, upon receiving reasonable prior notice from~~ the Developer, to enter any other Council owned or controlled land in order to enable the Developer to properly perform its obligations under this Deed.

~~16.3~~19.3 Nothing in this Deed creates or gives the Developer any estate or interest in any part of the land referred to in clause ~~16.1~~19.1 or ~~16.2~~19.2.

19.4 The Developer must:

19.4.1 provide the Council with at least two (2) Business Days' notice that the Developer requires access to land owned or controlled by Council;

19.4.2 comply with all reasonable security, safety and other requirements of the Council that has been previously notified to the Developer;

19.4.3 access the Council's land at its own risk;

19.4.4 make good any physical damage to the land owned and controlled by Council;

19.4.5 comply with and ensure that any person who is given access to land owned and controlled by Council comply with all reasonable workplace health and safety requirements of Council that has been previously notified to the Developer; and

19.4.6 take out any necessary and adequate insurance for any potential public liability that may arise from the Developer accessing land owned and controlled by Council.

~~17~~20 Access to land by Council

~~17.1~~20.1 The Council may enter on Land owned by the Developer upon which Work is being carried out by the Developer under this Deed in order to inspect, examine or test the Work, or to remedy any breach by the Developer of its obligations under this Deed relating to the Work.

~~17.2~~20.2 The Council is to give the Developer at least 10 Business Days written notice before it enters onto the Land under clause 20.1~~17.1~~.

~~18~~21 Council's obligations relating to Work

~~18.1~~21.1 The Council is not to unreasonably delay, hinder or otherwise interfere with the performance by the Developer of its obligations under this Deed, and is to use its reasonable endeavours to ensure third parties unrelated to the Developer do not unreasonably delay, hinder or otherwise interfere with the performance of those obligations.

~~19~~22 Protection of people, property & utilities

~~19.1~~22.1 The Developer is to ensure to the fullest extent reasonably practicable in relation to the carrying out of the Works under this Deed on any land owned or controlled by Council that:

~~19.1.1~~22.1.1 all necessary measures are taken to protect people and property,

~~19.1.2~~22.1.2 unnecessary interference with the passage of people and vehicles is avoided, and

~~19.1.3~~22.1.3 nuisances and unreasonable noise and disturbances are prevented.

~~19.2~~22.2 Without limiting clause 22.1~~19.1~~, the Developer is not to obstruct, interfere with, impair or damage any public road, public footpath, public cycleway or other public thoroughfare, or any pipe, conduit, drain, watercourse or other public utility or service on any land owned or controlled by Council except as authorised by an Approval or as otherwise in writing by the Council or any relevant Authority.

~~20~~23 Repair of damage

~~20.1~~23.1 The Developer is to Maintain any Work required to be carried out by the Developer under this Deed until the Work is Completed for the purposes of this Deed or such later time as agreed between the Parties.

~~20.2~~23.2 The Developer is to carry out its obligation under clause ~~20.1~~23.1 at its own cost and to the satisfaction of the Council.

~~21~~24 Completion of Work

~~21.1~~24.1 The Developer is to give the Council written notice of the date on which it will complete Work required to be carried out under this Deed or any Stage.

~~21.2~~24.2 Within 20 Business Days of the date of this Deed, the Parties are to agree on the appointment of an Independent Certifier and in the event that the Parties cannot agree, then the Independent Certifier is to be nominated by the Association of Accredited Certifiers,

24.3 The Developer is to~~.~~:

24.3.1 provide to the Council a full works-as-executed-plan in respect of the Work the subject of the notice referred to in clause 24.1, and

~~21.2.1~~24.3.2 arrange for the Independent Certifier to inspect the Work the subject of the notice referred to in clause ~~21.1~~24.1 within 10 Business Days of the date specified in the notice for completion of the Work, in the presence of a representative of each of the Council and the Developer.

~~21.3~~24.4 The Developer is to retain the Independent Certifier and the cost of the Independent Certifier's inspection referred to in clause 24.3~~21.3~~ is to be borne by the Developer.

21.424.5 Subject to clause 25.622.6, Work required to be carried out by the Developer under this Deed, or a Stage, is completed for the purposes of this Deed when Council is provided with a full works-as-executed-plan in respect of the Work (including as completed, rectified or repaired pursuant to clause 24.8) and the Independent Certifier gives a written notice (**Completion Notice**) to the parties to the effect that the Work is Complete and may be used for its intended purpose except for minor defects and omissions specified in the Completion Notice.

21.524.6 If the Council is the owner of the land on which Work the subject of a Completion Notice referred to in clause 24.521.5 is issued, then subject to clause 24.1021.10, the Council assumes responsibility for the Work upon the issuing of the Completion Notice.

21.624.7 If the Council is not the owner of the land on which Work the subject of a Completion Notice referred to in clause 24.521.5 is issued, then subject to clause 24.1021.10:

21.6.124.7.1 if the Developer is the owner of the land at that date, then the Council assumes responsibility for the Work when it later becomes the owner, or

21.6.224.7.2 if the Developer is not the owner of the land at that date, then the Council assumes responsibility for the Work upon the issuing of the Completion Notice

21.724.8 Before the Independent Certifier gives the Parties a Completion Notice referred to in clause 24.521.5, it may give the Developer a written direction to complete, rectify or repair any specified part of the Work to the reasonable satisfaction of the Independent Certifier.

21.824.9 The Developer, at its own cost, is to promptly comply with a direction referred to in clause 24.821.8.

21.924.10 If the Independent Certifier's Completion Notice given under clause 24.821.8 identifies minor defects or omissions in the Work, the Developer must at its cost promptly remedy those defects or omissions.

2225 Rectification of defects

22.125.1 The Council may give the Developer a Rectification Notice during the Defects Liability Period.

22.225.2 If:

22.2.125.2.1 the Developer agrees with the content of the Rectification Notice, the Developer must, at its own cost, comply with the Rectification Notice according to its terms and to the reasonable satisfaction of the Council; or

22.2.225.2.2 the Developer disputes the content of the Rectification Notice (**Disputed Rectification Notice**) then, within 10 Business Days of receipt of the Rectification Notice, the Parties are to agree on the appointment of an Independent Certifier at the Developer's cost to determine the reasonableness of the Disputed Rectification Notice and, in the event the Parties cannot agree on the Independent

Certifier then the Independent Certifier is to be nominated by the Association of Accredited Certifiers.

~~22.3~~25.3 In the event that the Independent Certifier is retained under clause 25.2.2~~22.2.2~~ to determine the reasonableness of a Disputed Rectification Notice:

~~22.3.1~~25.3.1 both the Developer and the Council must do all things reasonably necessary to enable the Independent Certifier to determine the dispute;

~~22.3.2~~25.3.2 subject to clause 25.7~~22.7~~, the determination by the Independent Certifier is final and binding upon the Parties; and

~~22.3.3~~25.3.3 the Developer must, at its own cost, comply with the determination made by the Independent Certifier with respect to the Disputed Rectification Notice and to the reasonable satisfaction of Council (**Further Works Notice**).

~~22.4~~25.4 The Developer must give the Council written notice of the Completion (**Rectification Completion Notice**) of the works required to be carried out in accordance with a:

~~22.4.1~~25.4.1 Rectification Notice; or

~~22.4.2~~25.4.2 Further Works Notice,

and, in the event Council is not satisfied with the completion of those Works it must give the Developer written notice (**Further Dispute Notice**) within 5 Business Days of the date of the receipt of the Rectification Completion Notice detailing the extent of the alleged incomplete Works.

~~22.5~~25.5 Within 20 Business Days of receipt of the Further Dispute Notice provided by Council to the Developer in clause 25.4~~22.4~~, the Developer must retain the Independent Certifier to make a determination as to:

~~22.5.1~~25.5.1 whether the Developer has Completed the Works required under the Rectification Notice or Further Works Notice, whichever is applicable, to the reasonable satisfaction of the Independent Certifier; or

~~22.5.2~~25.5.2 whether the Developer has not Completed the Works required to the Independent Certifier's reasonable satisfaction and if so, the details of the Works that are required to be completed.

Subject to clause 25.7~~22.7~~, such determination is final and binding on the Parties.

~~22.6~~25.6 The Council is to do such things as are reasonably necessary to enable the Developer to comply with a Rectification Notice or Further Works Notice that has been given to it under clause 25~~22~~.

~~22.7~~25.7 Notwithstanding clause 24~~21~~ and this clause 25~~22~~:

~~22.7.1~~25.7.1 Council has the right to enter onto land which the Developer owns and upon which the Work is being carried out, to inspect the Works during construction;

~~22.7.2~~25.7.2 Council may issue a written notice (**Council Dispute Notice**) to the Developer requiring rectification of a Work in the event that in Council's reasonable opinion, the Works are not being carried out by the Developer in accordance with the provisions of this Deed; and

~~22.7.3~~25.7.3 Within 5 Business Days of the issue of a Council Dispute Notice in clause 25.7.2~~22.7.2~~, the Developer must notify the Council in writing as to whether:

(a) it accepts the contents of the Council Dispute Notice and if so, the Developer must, at its own cost, promptly carry out the specified rectification works; or

(b) it does not accept the contents of the Council Dispute Notice and if so, the parties must meet within 10 Business Days in an effort to resolve the dispute and failing resolution, the provisions of clause 30~~26~~ apply.

~~23~~26 ~~22A~~ Maintenance of Work

~~23.1~~26.1 ~~22A.1~~ The Developer is to Maintain a Work during the Maintenance Period.

~~23.2~~26.2 ~~22A.2~~ Before the Independent Certifier gives a Completion Notice under clause ~~21.5~~24.5 for a Work, the Developer is to provide the Council with the Maintenance Security for the Work and the Developer is not to request the Independent Certifier give the Completion Notice until the Maintenance Security has been provided to the Council.

~~23.3~~26.3 ~~22A.3~~ The Council is to hold the Maintenance Security until the later of:

~~23.3.1~~26.3.1 ~~22A.3.1~~ the end of the Maintenance Period, or

~~23.3.2~~26.3.2 ~~22A.3.2~~ if the Council has given the Developer a Rectification Notice during the Defects Liability Period under clause 25~~22~~ or a notice under clause 34.1~~30.1~~ in respect of maintenance of the Work during the Maintenance Period, the date the relevant Defect or breach has been Rectified.

~~23.4~~26.4 ~~22A.4~~ Notwithstanding clause ~~28.9~~32.9, the Parties may agree that Council may continue to hold the full Works Security during the Maintenance Period as the Maintenance Security required under this clause.

~~23.5~~26.5 ~~22A.5 Clauses 28.6, 28.8 and 28.10 to 28.13~~Clauses 32.6, 32.8 and 32.10 to 32.13 inclusive apply to the Maintenance Security provided under this clause as if references to '*Work Security*' or *'Monetary Security'* are references to '*Maintenance Security*'.

~~24~~27 Deferral of Work

~~24.1~~27.1 Notwithstanding any other provision of this Deed, if the Developer forms the view at any time after it has provided the Work Security for a Work that it is unable to make all or part of a Development Contribution comprising all or part of the Work or dedicate the relevant Land by the time specified in column 4 of Schedule 1, then:

~~24.1.1~~27.1.1 the Developer must provide written notice to the Council to that effect and, if only part of the Development Contribution is to be made, the notice must identify:

(a) the reasons for the deferral request; and

(b) relevant part of the Work and relevant Land dedication that is proposed to be deferred;

~~24.1.2~~27.1.2 the Developer must provide to Council, for Council's approval, a revised completion date for the Work (or part of the Work) and the dedication of the relevant Land;

~~24.1.3~~27.1.3 Council can approve, or not approve a revised completion date in its discretion;

~~24.1.4~~27.1.4 if the Council does not approve the Developer's revised completion date for the Work (or part of the Work) and the dedication of the relevant Land, the Council and Developer must negotiate in good faith and agree upon a revised completion date for the Work (or part of the Work) and the dedication of the relevant Land; and

~~24.1.5~~27.1.5 the time for Completion of the Work (or part of the Work) and the dedication of the relevant Land under this Deed in column 4 of Schedule 1 will be taken to be the revised completion date approved by the Council or as agreed between the parties under clause 27.1.3~~23.1.3~~ and nothing prevents the issuing of a Subdivision Certificate that may be issued before that time.

~~24.2~~27.2 If the Developer complies with clause 27.1~~23.1~~, then:

~~24.2.1~~27.2.1 it will not be considered to be in breach of this Deed as a result of a failure to Complete all or part of the Work or dedicate the relevant Land by the time specified in Column 4 of Schedule 1;

~~24.2.2~~27.2.2 if applicable, any relevant Subdivision Certificate may be issued if the time for compliance for the Completion of a Work or dedication of the relevant Land is required prior to the issue of a Subdivision Certificate in Column 4 of Schedule 1; and

~~24.2.3~~27.2.3 in the event that only part of the Work has been Completed and the balance remains to be Completed as agreed with Council in clause 23.1, then the Developer will be taken to have Completed that part of the Work for the purposes of this Deed and any Surplus Credit (if any) will accrue for that part of the Works Completed.

~~24.3~~27.3 If the Work (or part of the Work) is not Completed by the revised date for completion of the Work (or part of the Work) agreed under clause 27.1.5~~23.1.5~~, then the Council may call on the Work Security to meet any of its reasonable costs incurred under this Deed in respect of the failure to Complete the Work (or part of the Work) by the revised date for Completion.

~~24.4~~27.4 The Work Security held by the Council is to be reduced for that portion of the Completed Works in accordance with the provisions of clause 32~~28~~.

~~24.5~~27.5 In the event that the Developer Completes part of a Work by the time specified in column 4 of Schedule 1 and Council agrees to defer the uncompleted part of the Work under clause 27.1~~23.1~~, then Council must, if requested by the Developer, accept the dedication of the Land upon which the Completed part of the Work is constructed.

~~24.6~~27.6 The Council is to permit the Developer to enter and occupy any land owned or controlled by the Council for the purpose of enabling the Developer to carry out any Work under this Deed that is required to be carried out on such land or to perform any other obligation imposed on the Developer by or under this Deed.

~~25~~28 Works-As-Executed-Plan

~~25.1~~28.1 ~~No later than 60 Business Days after Work is completed for the purposes of this Deed, the Developer~~ The Developer is to submit to the Council a full works-as-executed-plan in respect of ~~the Work.~~a Work pursuant to clauses 24.3.1 and 24.5.

~~25.2~~28.2 The Developer warrants that it is the licensee of the copyright in the plans referred to in clause 28.1~~24.1~~ and is to procure for the Council by the time of submission a non-exclusive sub-licence to use the copyright in the plans for the purposes of this Deed.

~~26~~29 Removal of Equipment

~~26.1~~29.1 When Work on any Council owned or controlled land is completed for the purposes of this Deed, the Developer, without delay, is to:

~~26.1.1~~29.1.1 remove any Equipment from Land and make good any damage or disturbance to the land as a result of that removal, and

~~26.1.2~~29.1.2 leave the land in a neat and tidy state, clean and free of rubbish.

Part 3 – Dispute Resolution

~~27~~30 Dispute resolution – expert determination

~~27.1~~30.1 This clause applies to a Dispute between any of the Parties to this Deed concerning a matter arising in connection with this Deed that can be determined by an appropriately qualified expert if:

~~27.1.1~~30.1.1 the Parties to the Dispute agree that it can be so determined, or

~~27.1.2~~30.1.2 the Chief Executive Officer of the professional body that represents persons who appear to have the relevant expertise to determine the Dispute gives a written opinion that the Dispute can be determined by a member of that body.

~~27.2~~30.2 A Dispute to which this clause applies is taken to arise if one Party gives another Party a notice in writing specifying particulars of the Dispute.

~~27.3~~30.3 If a notice is given under clause 30.2~~26.2~~, the Parties are to meet within 10 Business Days of the notice in an attempt to resolve the Dispute.

~~27.4~~30.4 If the Dispute is not resolved within a further 20 Business Days, the Dispute is to be referred to the President of the Resolution Institute (NSW Chapter) to appoint an expert for expert determination.

~~27.5~~30.5 The expert determination is binding on the Parties except in the case of fraud or misfeasance by the expert.

~~27.6~~30.6 Each Party is to bear its own costs arising from or in connection with the appointment of the expert and the expert determination.

~~27.7~~30.7 The Parties are to share equally the costs of the President, the expert, and the expert determination.

~~28~~31 Dispute Resolution - mediation

~~28.1~~31.1 This clause applies to any Dispute arising in connection with this Deed other than a Dispute to which clause 30~~26~~ applies.

~~28.2~~31.2 Such a Dispute is taken to arise if one Party gives another Party a notice in writing specifying particulars of the Dispute.

~~28.3~~31.3 If a notice is given under clause ~~27.2,~~31.2, the Parties are to meet within 10 Business Days of the notice in an attempt to resolve the Dispute.

~~28.4~~31.4 If the Dispute is not resolved within a further 20 Business Days, the Parties are to mediate the Dispute in accordance with the mediation rules of the Resolution Institute (NSW Chapter) as published from time to time and are to request the President of the Resolution Institute (**President**) to select a mediator.

~~28.5~~31.5 If the Dispute is not resolved by mediation within a further 20 Business Days, or such longer period as may be necessary to allow any mediation process which has been commenced to be completed, then the Parties may exercise their legal rights in relation to the Dispute, including by the commencement of legal proceedings in a court of competent jurisdiction in New South Wales.

~~28.6~~31.6 Each Party is to bear its own costs arising from or in connection with the appointment of a mediator and the mediation.

~~28.7~~31.7 The Parties are to share equally the costs of the President, the mediator, and the mediation.

Part 4 - Enforcement

~~29~~32 Security for performance of obligations

~~29.1~~32.1 The Developer is to pay the Council the Supervision Fee to the Council before the issuing of the first Construction Certificate relating to a Work.

29.232.2 If the Supervision Fee has been paid to the Council, the Developer is to provide the Works Security to the Council for each Work that the Developer is required to carry out under this Deed in the following amount:

29.2.132.2.1 for any Work that is carried out on private land and that will be later dedicated to Council under the terms of this Deed or otherwise, an amount equal to 25% of the Contribution Value of the Work or such other amount as is agreed in writing by the Council;

29.2.232.2.2 for any Work that is carried out on public land and that is identified under a Contributions Plan, an amount equal to 25% of the Contribution Value of the Work or such other amount as is agreed in writing by the Council; or

29.2.332.2.3 for any Work that is carried out on public land but is not identified under a Contributions Plan, an amount equal to 125% of the Contribution Value of the Works.

29.332.3 Unless and until the Supervision Fee has been paid, the Developer is to provide Works Security to the Council for each Work that the Developer is required to carry out under this Deed in an amount equal to 125% of the Contribution Value of the Work or such other amount as is agreed in writing by the Council.

29.432.4 The Works Security is to be provided to the Council before the issuing of a Construction Certificate relating to the Work or such other time as agreed between the parties in writing and the Work is not to be carried out unless the Work Security has been provided in accordance with this clause.

29.532.5 For the purposes of clause 28.2,32.2, any security provided by the Developer to the Council for Basin 5 and Channel 6 before the commencement of this Deed including security provided under section 4.17(6) of the Act that satisfies clause 28.2 32.2in relation to Basin 5 and Channel 6 and which the Council continues to hold is taken to be a Work Security provided under that clause.

29.632.6 The Work Security may be provided by means of one or more separate Securities.

29.732.7 The Council, in its absolute discretion and despite clause 1916, may refuse to allow the Developer to enter, occupy or use any land owned or controlled by the Council or refuse to provide the Developer with any plant, equipment, facilities or assistance relating to the carrying out the Development if the Developer has not provided the Work Security to the Council in accordance with this Deed.

29.832.8 The Council may call-up and apply the Work Security or a Monetary Security in accordance with clause 3430 to remedy any breach of this Deed notwithstanding any other remedy it may have under this Deed, under any Act or otherwise at law or in equity.

29.932.9 The Council is to release and return the Works Security for a Work to the Developer as follows:

29.9.132.9.1 90% within 14 days of completion of the Work in accordance with this Deed,

29.9.232.9.2 10% within 14 days after the end of the Defects Liability Period relating to the Work or completion of rectification of the Work in accordance with clause 22,25, whichever is later.

29.1032.10 The Developer may at any time provide the Council with a replacement Works Security or Monetary Security.

29.1132.11 On receipt of a replacement Works Security or Monetary Security, the Council is to release and return the relevant Security that has been replaced to the Developer.

29.1232.12 If the Council calls-up the Works Security or Monetary Security or any portion of it, it may, by written notice to the Developer, require the Developer to provide a further or replacement Security to ensure that the amount of Security held by the Council equals the amount it is entitled to hold under this Deed.

29.1332.13 The Developer is to ensure that the Works Security provided to the Council is at all times maintained to the full current indexed value.

3033 Acquisition of land required to be dedicated

30.133.1 28.1 Subject to clause 2723:

30.1.133.1.1 If the Developer does not dedicate land required to be dedicated under this Deed at the time at which it is required to be dedicated, the Developer consents to the Council compulsorily acquiring the land for compensation in the amount of $1 without having to follow the pre-acquisition procedure under the Just Terms Act.

30.1.233.1.2 The Council is to only acquire land pursuant to clause 33.1.129.1.1 if it considers it reasonable to do so having regard to the circumstances surrounding the failure by the Developer to dedicate the land required to be dedicated under this Deed.

30.1.333.1.3 Clause 33.1.129.1.1 constitutes an agreement for the purposes of s30 of the Just Terms Act.

30.1.433.1.4 If, as a result of the acquisition referred to in clause 33.1.129.1.1, the Council is required to pay compensation to any person other than the Developer, the Developer is to reimburse the Council that amount, upon a written request being made by the Council.

30.233.2 The Developer indemnifies and keeps indemnified the Council against all Claims made against the Council as a result of any contamination over the whole or any part of the land concerned that is required to be cleaned up by an Authority or in order for the land to be used for the purpose for which it is acquired by the Council, excluding:

30.2.133.2.1 contamination that arose on the land on or after the date that the land is acquired by Council; and

30.2.233.2.2 any contamination that Council has knowledge of and which existed on or before the date that the land is acquired by Council and in respect of which the Developer has remediated the land, provided that the remediation was carried out in accordance with all relevant laws and in accordance with the requirements of and to the satisfaction of all relevant Authorities on or before the date that the land is acquired by the Council.

For the avoidance of doubt, the provisions of this clause 33.2~~29.2~~ apply only where there is an acquisition of land by Council under the Just Terms Act.

~~30.3~~33.3 The Developer is to promptly do all things necessary, and consents to the Council doing all things necessary, to give effect to this clause 33~~29~~, including without limitation:

(a) signing any documents or forms,

(b) producing certificates of title to the Registrar-General under the *Real Property Act 1900*, and

(c) paying the Council's costs arising under this clause 33~~29~~.

~~31~~34 Breach of obligations

~~31.1~~34.1 If the Council reasonably considers that the Developer is in breach of any obligation under this Deed, it may give a written notice to the Developer:

~~31.1.1~~34.1.1 specifying the nature and extent of the breach,

~~31.1.2~~34.1.2 requiring the Developer to:

(a) rectify the breach if it reasonably considers it is capable of rectification, or

(b) pay compensation to the reasonable satisfaction of the Council in lieu of rectifying the breach if it reasonably considers the breach is not capable of rectification,

specifying the period within which the breach is to be rectified or compensation paid, being a period that is reasonable in the circumstances.

~~31.2~~34.2 If the Developer fails to fully comply with a notice referred to in clause 34.1~~30.1~~, the Council may, without further notice to the Developer, call-up the Security provided by the Developer under this Deed and apply it to remedy the Developer's breach.

~~31.3~~34.3 If the Developer fails to comply with a notice given under clause 34.1~~30.1~~ relating to the carrying out of Work under this Deed, the Council may step-in and remedy the breach and may enter, occupy and use any land owned or controlled by the Developer and any Equipment on such land for that purpose.

~~31.4~~34.4 Any reasonable costs incurred by the Council in remedying a breach in accordance with clause 34.2~~30.2~~ or clause 34.3~~30.3~~ may be recovered by the Council by either or a combination of the following means:

~~31.4.1~~34.4.1 by calling-up and applying the Security provided by the Developer under this Deed, or

~~31.4.2~~34.4.2 as a debt due in a court of competent jurisdiction.

~~31.5~~34.5 For the purpose of clause 34.4~~30.4~~, the Council's costs of remedying a breach the subject of a notice given under clause 34.1~~30.1~~ include, but are not limited to:

~~31.5.1~~34.5.1 the costs of the Council's servants, agents and contractors reasonably incurred for the purpose of remedying the breach,

~~31.5.2~~34.5.2 all fees and charges reasonably incurred by the Council in remedying the breach, and

~~31.5.3~~34.5.3 all legal costs and expenses reasonably incurred by the Council, by reason of the breach.

~~31.6~~34.6 Nothing in this clause 30 prevents the Council from exercising any rights it may have at law or in equity in relation to a breach of this Deed by the Developer, including but not limited to seeking relief in an appropriate court.

~~32~~35 Enforcement in a court of competent jurisdiction

~~32.1~~35.1 Without limiting any other provision of this Deed, the Parties may enforce this Deed in any court of competent jurisdiction.

~~32.2~~35.2 For the avoidance of doubt, nothing in this Deed prevents:

~~32.2.1~~35.2.1 a Party from bringing proceedings in the Land and Environment Court to enforce any aspect of this Deed or any matter to which this Deed relates, or

~~32.2.2~~35.2.2 the Council from exercising any function under the Act or any other Act or law relating to the enforcement of any aspect of this Deed or any matter to which this Deed relates.

Part 5 – Registration & Restriction on Dealings

~~33~~36 Registration of this Agreement

~~33.1~~36.1 The Developer agrees to:

~~33.1.1~~36.1.1 register this Deed for the purposes of s7.6 of the Act on the titles of the Dedication Land; and

~~33.1.2~~36.1.2 except where the provisions of clause 36.5~~32.5~~ apply, the Developer agrees to register this Deed for the purposes of s7.6 of the Act on the balance of the Land.

~~33.2~~36.2 Not later than 7 Business Days after a requirement for registration of this Deed arises under clause 36.1~~32.1~~, the Developer is to deliver to the Council in registrable form:

~~33.2.1~~36.2.1 an instrument requesting registration of this Deed on the title to the relevant Land or Dedication Land duly executed by the Developer and any other person required by the Registrar-General to execute such form, and

~~33.2.2~~36.2.2 the written irrevocable consent of each person referred to in s7.1 of the Act to that registration.

~~33.3~~36.3 The Developer is to do such other things as are reasonably necessary to enable registration of this Deed to occur.

~~33.4~~36.4 The Parties are to do such things as are reasonably necessary to remove any notation relating to this Deed from the title of any part of the Land:

~~33.4.1~~36.4.1 in so far as the part of the Land concerned is a Final Lot,

~~33.4.2~~36.4.2 in relation to any other part of the Land, once the Developer has completed its obligations under this Deed to the reasonable satisfaction of the Council or this Deed is terminated or otherwise comes to an end for any other reason.

~~33.5~~36.5 This Deed will not be required to be registered for the purposes of s7.1 of the Act if:

~~33.5.1~~36.5.1 the Work Security is provided by the Developer to the Council in accordance with clause 32~~28~~ of this Deed; and

~~33.5.2~~36.5.2 where applicable, replacement Work Security has been provided by a person to whom the Land or part is to be sold or transferred in accordance with clause 37.1.3~~33.1.3~~.

~~34~~37 Restriction on dealings

~~34.1~~37.1 The Developer is not to:

~~34.1.1~~37.1.1 sell or transfer the Land (or part of the Land), other than a Final Lot, or

~~34.1.2~~37.1.2 assign the Developer's rights or obligations under this Deed, or novate this Deed,

to any person unless:

~~34.1.3~~37.1.3 the Developer has, at no cost to the Council, first procured the execution by the person to whom the Land or part is to be sold or transferred or the Developer's rights or obligations under this Deed are to be assigned or novated, of a deed in favour of the Council on terms reasonably satisfactory to the Council including a request to provide Security to Council as required under clause 32~~28~~, and

~~34.1.4~~37.1.4 the Council has given written notice to the Developer stating that it reasonably considers that the purchaser, transferee, assignee or novatee, is reasonably capable of performing its obligations under this Deed, and

~~34.1.5~~37.1.5 the Developer is not in material breach of this Deed, and

~~34.1.6~~37.1.6 the Council otherwise consents to the transfer, assignment or novation, such consent not to be unreasonably withheld.

~~34.2~~37.2 Clause 37.1~~33.1~~ does not apply in relation to any sale or transfer of the Land if:

~~34.2.1~~37.2.1 this Deed is registered on the title to the Land at the time of the sale, or

~~34.2.2~~37.2.2 the Council is satisfied (acting reasonably) that the Developer retains all of its obligations under this Deed despite the sale or transfer.

Part 6 – Indemnities & Insurance

~~35~~38 Risk

~~35.1~~38.1 The Developer performs this Deed at its own risk and its own cost.

~~36~~39 Release

~~36.1~~39.1 The Developer releases the Council from any Claim it may have against the Council arising in connection with the performance of the Developer's obligations under this Deed except if, and to the extent that, the Claim arises because of the Council's negligence or default.

~~37~~40 Indemnity

~~37.1~~40.1 The Developer indemnifies the Council from and against all Claims that may be sustained, suffered, recovered or made against the Council arising in connection with the design or construction of a Work for a period of 6 years from the date of issue of the Completion Notice in clause 24~~21~~ (**Completion Notice Date**) except if, and to the extent that, the Claim arises from:

~~37.1.1~~40.1.1 the negligent act or omission of the Council, it's employees or agents; or

~~37.1.2~~40.1.2 maintenance, replacement or repair of a Work undertaken, any want of maintenance, replacement or repair or damage to a Work after the Completion Notice Date.

~~37.2~~40.2 In respect of the Channel TC02 Works WIK Agreement:

~~37.2.1~~40.2.1 this clause 36 applies to the Channel TC02 Works;

~~37.2.2~~40.2.2 this clause 36 supersedes any indemnity (**WIK Indemnity**) provided by the Developer in favour of Council in relation to the Channel TC02 Works in the Channel TC02 Works WIK Agreement; and

~~37.2.3~~40.2.3 the WIK Indemnity has no effect and cannot be enforced by Council.

~~38~~41 Insurance

~~38.1~~41.1 The Developer is to take out or procure its contractor to take out and keep current to the satisfaction of the Council the following insurances in relation to Work required to be carried out by the Developer under this Deed up until the Work is taken to have been completed in accordance with this Deed:

~~38.1.1~~41.1.1 contract works insurance, noting the Council as an interested party, for the full replacement value of the Works (including the cost of

demolition and removal of debris, consultants' fees and authorities' fees), to cover the Developer's liability in respect of damage to or destruction of the Works,

38.1.241.1.2 public liability insurance for at least $20,000,000.00 for a single occurrence for liability to any third party, noting the Council and any subcontractor as an interested party,

38.1.341.1.3 workers compensation insurance as required by law, and

38.1.441.1.4 any other insurance required by law.

38.241.2 If the Developer fails to comply with clause 41.137.1, the Council may effect and keep in force such insurances and pay such premiums as may be necessary for that purpose and the amount so paid shall be a debt due from the Developer to the Council and may be recovered by the Council as it deems appropriate including:

38.2.141.2.1 by calling upon the Security provided by the Developer to the Council under this Deed, or

38.2.241.2.2 recovery as a debt due in a court of competent jurisdiction.

38.341.3 The Developer is not to commence to carry out any Work unless it has first provided to the Council satisfactory written evidence of all of the insurances specified in clause 41.137.1.

Part 7 – Other Provisions

3942 Annual report by Developer

39.142.1 If requested by Council, the Developer is to provide to the Council a report detailing the performance of its obligations under this Deed.

39.242.2 The report referred is to be in such a form and to address such matters as required by the Council from time to time.

4043 Review of Deed

40.143.1 The Parties are to review this Deed:

40.1.143.1.1 at a time to be agreed between the Parties, with each Party acting in good faith; and

40.1.243.1.2 if either party is of the opinion that any change of circumstance has occurred, or is imminent, that materially affects the operation of this Deed.

40.243.2 For the purposes of clause 43.139.1, the relevant changes include (but are not limited to) any change to a law that restricts or prohibits or enables the Council or any other planning authority to restrict or prohibit any aspect of the Development.

~~40.3~~43.3 For the purposes of addressing any matter arising from a review of this Deed referred to in clause 43.1~~39.1~~, the Parties are to use all reasonable endeavours to agree on and implement appropriate amendments to this Deed.

~~40.4~~43.4 If this Deed becomes illegal, unenforceable or invalid as a result of any change to a law, the Parties agree to do all things necessary to ensure that an enforceable agreement of the same or similar effect to this Deed is entered into.

~~40.5~~43.5 A failure by a Party to agree to take action requested by the other Party as a consequence of a review referred to in clause 43.1~~39.1~~ (but not 43.4~~39.4~~) is not a Dispute for the purposes of this Deed and is not a breach of this Deed.

~~41~~44 Notices

~~41.1~~44.1 Any notice, consent, information, application or request that is to or may be given or made to a Party under this Agreement is only given or made if it is in writing and sent in one of the following ways:

~~41.1.1~~44.1.1 delivered or posted to that Party at its address set out in the Summary Sheet, or

~~41.1.2~~44.1.2 emailed to that Party at its email address set out in the Summary Sheet.

~~41.2~~44.2 If a Party gives the other Party 3 Business Days notice of a change of its address or email, any notice, consent, information, application or request is only given or made by that other Party if it is delivered, posted, or emailed to the latest address or email address.

~~41.3~~44.3 Any notice, consent, information, application or request is to be treated as given or made if it is:

~~41.3.1~~44.3.1 delivered, when it is left at the relevant address,

~~41.3.2~~44.3.2 sent by post, 2 Business Days after it is posted, or

~~41.3.3~~44.3.3 sent by email and the sender does not receive a delivery failure message from the sender's internet service provider within a period of 24 hours of the email being sent.

~~41.4~~44.4 If any notice, consent, information, application or request is delivered, or an error free transmission report in relation to it is received, on a day that is not a business day, or if on a business day, after 5pm on that day in the place of the Party to whom it is sent, it is to be treated as having been given or made at the beginning of the next business day.

~~42~~45 Approvals and Consent

~~42.1~~45.1 Except as otherwise set out in this Deed, and subject to any statutory obligations, a Party may give or withhold an approval or consent to be given under this Deed in that Party's absolute discretion and subject to any conditions determined by the Party.

~~42.2~~45.2 A Party is not obliged to give its reasons for giving or withholding consent or for giving consent subject to conditions.

~~43~~46 Costs

~~43.1~~46.1 The Developer is to pay to the Council the Council's costs of preparing, negotiating, executing and stamping this Deed, and any document related to this Deed within 20 Business Days of a written demand by the Council for such payment.

The Developer is also to pay to the Council the Council's reasonable costs of enforcing this Deed within 5 Business Days of a written demand by the Council for such payment.

~~44~~47 Entire Deed

~~44.1~~47.1 This Deed contains everything to which the Parties have agreed in relation to the matters it deals with.

~~44.2~~47.2 No Party can rely on an earlier document, or anything said or done by another Party, or by a director, officer, agent or employee of that Party, before this Deed was executed, except as permitted by law.

~~45~~48 Further Acts

~~45.1~~48.1 Each Party must promptly execute all documents and do all things that another Party from time to time reasonably requests to effect, perfect or complete this Deed and all transactions incidental to it.

~~46~~49 Governing Law and Jurisdiction

~~46.1~~49.1 This Deed is governed by the law of New South Wales.

~~46.2~~49.2 The Parties submit to the non-exclusive jurisdiction of its courts and courts of appeal from them.

~~46.3~~49.3 The Parties are not to object to the exercise of jurisdiction by those courts on any basis.

~~46.3.1~~49.3.1 Not used

~~47~~50 No Fetter

~~47.1~~50.1 Nothing in this Deed shall be construed as requiring Council to do anything that would cause it to be in breach of any of its obligations at law, and without limitation, nothing shall be construed as limiting or fettering in any way the exercise of any statutory discretion or duty.

~~48~~51 Not used

~~49~~52 Severability

~~49.1~~52.1 If a clause or part of a clause of this Deed can be read in a way that makes it illegal, unenforceable or invalid, but can also be read in a way that makes it legal, enforceable and valid, it must be read in the latter way.

~~49.2~~52.2 If any clause or part of a clause is illegal, unenforceable or invalid, that clause or part is to be treated as removed from this Deed, but the rest of this Deed is not affected.

~~50~~53 Amendment

~~50.1~~53.1 No amendment of this Deed will be of any force or effect unless it is in writing and signed by the Parties to this Deed in accordance with clause 25D of the Regulation.

~~51~~54 Waiver

~~51.1~~54.1 The fact that a Party fails to do, or delays in doing, something the Party is entitled to do under this Deed, does not amount to a waiver of any obligation of, or breach of obligation by, another Party.

~~51.2~~54.2 A waiver by a Party is only effective if it is in writing.

~~51.3~~54.3 A written waiver by a Party is only effective in relation to the particular obligation or breach in respect of which it is given. It is not to be taken as an implied waiver of any other obligation or breach or as an implied waiver of that obligation or breach in relation to any other occasion.

~~52~~55 GST

~~52.1~~55.1 In this clause:

Adjustment Note, **Consideration**, **GST**, **GST Group**, **Margin Scheme**, **Money, Supply** and **Tax Invoice** have the meaning given by the GST Law.

GST Amount means in relation to a Taxable Supply the amount of GST payable in respect of the Taxable Supply.

GST Law has the meaning given by the *A New Tax System (Goods and Services Tax) Act 1999* (Cth).

Input Tax Credit has the meaning given by the GST Law and a reference to an Input Tax Credit entitlement of a party includes an Input Tax Credit for an acquisition made by that party but to which another member of the same GST Group is entitled under the GST Law.

Taxable Supply has the meaning given by the GST Law excluding (except where expressly agreed otherwise) a supply in respect of which the supplier

chooses to apply the Margin Scheme in working out the amount of GST on that supply.

~~52.2~~55.2 Subject to clause 55.4~~51.4~~, if GST is payable on a Taxable Supply made under, by reference to or in connection with this Deed, the Party providing the Consideration for that Taxable Supply must also pay the GST Amount as additional Consideration.

~~52.3~~55.3 Clause 55.2~~51.2~~ does not apply to the extent that the Consideration for the Taxable Supply is expressly stated in this Deed to be GST inclusive.

~~52.4~~55.4 No additional amount shall be payable by the Council under clause 55.2~~51.2~~ unless, and only to the extent that, the Council (acting reasonably and in accordance with the GST Law) determines that it is entitled to an Input Tax Credit for its acquisition of the Taxable Supply giving rise to the liability to pay GST.

~~52.5~~55.5 If there are Supplies for Consideration which is not Consideration expressed as an amount of Money under this Deed by one Party to the other Party that are not subject to Division 82 of the *A New Tax System (Goods and Services Tax) Act 1999*, the Parties agree:

~~52.5.1~~55.5.1 to negotiate in good faith to agree the GST inclusive market value of those Supplies prior to issuing Tax Invoices in respect of those Supplies;

~~52.5.2~~55.5.2 that any amounts payable by the Parties in accordance with clause 55.2~~51.2~~ (as limited by clause 55.4~~51.4~~) to each other in respect of those Supplies will be set off against each other to the extent that they are equivalent in amount.

~~52.6~~55.6 No payment of any amount pursuant to this clause 55~~51~~, and no payment of the GST Amount where the Consideration for the Taxable Supply is expressly agreed to be GST inclusive, is required until the supplier has provided a Tax Invoice or Adjustment Note as the case may be to the recipient.

~~52.7~~55.7 Any reference in the calculation of Consideration or of any indemnity, reimbursement or similar amount to a cost, expense or other liability incurred by a party, must exclude the amount of any Input Tax Credit entitlement of that party in relation to the relevant cost, expense or other liability.

~~52.8~~55.8 This clause continues to apply after expiration or termination of this Deed.

~~53~~56 Explanatory Note

~~53.1~~56.1 The Appendix contains the Explanatory Note relating to this Deed required by clause 25E of the Regulation.

~~53.2~~56.2 Pursuant to clause 25E(7) of the Regulation, the Parties agree that the Explanatory Note is not to be used to assist in construing this Planning Deed.

~~54~~57 Frustrated Contracts Act

The Parties agree that the provisions of the *Frustrated Contracts Act 1978* (NSW) do not apply to this Deed.

58 Amendment to Channel TC02 Work WIK Agreement

58.1 On and from the date this clause is inserted into this Deed, the Channel TC02 Work WIK Agreement is amended as follows:

58.1.1 the definition of '*Total Value of Works*' in the Recitals is omitted and replaced with the following:

Total Value of Works $1,713,071, being the value of the Works determined by the Minister administering the Environmental Planning and Assessment Act 1979 following an assessment by IPART.

58.1.2 clauses 11(f), (g) and (h) are omitted.

58.1.3 the table under the heading '*Total Value of Works*' in Schedule A is omitted and replaced with the following:

Contribution Plan Work	**Amount**
ML1.22 – 33m wide landscaped open channel (modified full item)	$1,423,871
ML1.23 – GPT (full item)	$289,200
Total Value of Works	$1,713,071
Less 3% Supervision Fees	$51,392
Total Offset Amount against Section 7.11 Contribution	$1,661,679

Schedule 1

(Clause 10)

Development Contributions

Column 1	Column 2	Column 3	Column 4	Column 5
Item / Contribution	Public Purpose	Manner & Extent	Timing	Contribution Value
A. Monetary Contributions				
1. Agreed Final Lot Contribution	Public facilities	The Agreed Final Lot Contribution per Final Lot subject to clauses 11 and 12.	Prior to the issuing of the Subdivision Certificate that creates each Final Lot in the Development	Not applicable
B. Dedication of Land				
1. Drainage Reserve - Basin 5 and Channel TC06 Land	Water management and recreational facilities	As shown on the Land Dedication Plans.	Land to be dedicated before the issuing of the Subdivision Certificate that creates the first Final Lot in the Development subject to the deferral of works provisions in **clause 27~~23~~.**	$6,490,500.00
2. Local Park Land	Open space	As shown on the Land Dedication Plans.	Land to be dedicated before the issuing of the Subdivision Certificate that creates a Super Lot in Stage 13 of the Development subject to the deferral of works provisions in **clause 27~~23~~**.	$942,900.00
3. Sporting Field Land	Open Space	As shown on the Land Dedication Plans.	Land to be dedicated before the issuing of the Subdivision Certificate that creates a Super Lot in Stage 11 of the Development subject to the deferral of works provisions in **clause 27~~23~~**.	$7,200,000.00
4. Channel TC01 Land	Water management	As shown on the Water Management Land Plan.	In accordance with **clause ~~13.7~~13.7**, being 20 Business Days after Completion of the	The combined value for Items 4, 5, 6 and 7 under the heading "B

			Channel TC01 Works but subject to the deferral of works provisions in **clause 27~~23~~**.	Dedication of Land" in this table is $17,739,808~~ or if the Minister administering the Act has determined a higher value for this Land following an assessment by IPART, then that amount.~~ .
5. Channel TC02 Land	Water management	As shown on the Water Management Land Plan.	In accordance with **clause 13.7**, being 20 Business Days after the Practical Completion Date (as defined in Channel TC02 Works WIK Agreement) of the Channel TC02 Works, but subject to the deferral of works provisions in **clause 27~~23~~**.	
6. Culvert Crossings Land	Water management and Traffic and Transport Management	As shown on the Water Management Land Plan.	The Culvert Crossings Land will be dedicated in stages as follows: (a) land comprising ML1.13 to be dedicated at the time the first Plan of Subdivision for Stage 45 is registered; (b) land comprising ML1.16 will be dedicated at the time the first Plan of Subdivision for Stage 46 is registered; and (c) land comprising ML1.19 will be dedicated at the time the first Plan of Subdivision for Stage 47 is registered. but subject to the deferral of works provisions in ~~-~~**clause 27~~23~~**.	
7. Reserve 1000 Land	Open space	As shown on the Reserves Plan.	In accordance with **clause ~~13.7~~13.7**, being 20 Business Days after Completion of the	

			Reserve 1000 Works but subject to the deferral of works provisions in **clause 27~~23~~**.	
8. Reserve 990 Land	Open space	As shown on the Reserves Plan.	In accordance with **clause ~~13.7~~13.7**, being 20 Business Days after Completion of the Reserve 990 Works but subject to the deferral of works provisions in **clause 27~~23~~**	~~$1,807,500 or if the Minister administering the Act has determined a higher value for this Land following an assessment by IPART, then that amount.~~$1,807,500 .
9. Channel Works TC06 (Delayed Works) Land (near MD2) – Precinct 1 Stage 1	Water management	As shown on the Additional Land Dedication Plan – Lot 172 DP1191299 SP2 Land (8,531m^2)	In accordance with **clause 13.7**, being 20 Business Days after Completion of the Basin 5 and Channel TC06 works but subject to the deferral of works provisions in **clause 27**.	$3,840,000 .
10. Water Management Land (flood free)	Water management	As shown on the Additional Land Dedication Plan – Part Lot 31 DP1233692 SP2 Land – above 17.3m (830m^2).	In accordance with **clause 13.7**, being 20 Business Days after Completion of the TC03 Works and TC04 Works but subject to the deferral of works provisions in **clause 23**.	$373,500 .
11. Water Management Land (flood)	Water management	As shown on the Additional Land Dedication Plans – Part Lot 31 DP1233692 SP2 Land – below 17.3m (11,555m^2).	In accordance with **clause 13.7**, being 20 Business Days after Completion of the TC03 Works and TC04 Works but subject to the deferral of works provisions in **clause 23**.	$1,457,122, .

12. Reserve 995 Land	Open space	As shown on the Additional Land Dedication Plans – Lot 31 DP1233692 RE1 land – above 17.3m (52,595m^2).	In accordance with **clause 13.7**, being 20 Business Days after Completion of the Reserve 995 Works but subject to the deferral of works provisions in **clause 27**.	$21,439,378, .

Column 1	Column 2	Column 3	Column 4	Column 5
Item / Contribution	Public Purpose	Manner & Extent	Timing	Contribution Value
C. Carrying out of Work				
1. Drainage Reserve - Basin 5 and Channel TC06	Water management	Construction and completion of Basin 5 and Channel TC06 to the satisfaction of the Council.	Work to be completed before the issuing of the Subdivision Certificate that creates the first Final Lot in the Development subject to the deferral of works provisions in **clause ~~23~~26**.	$2,705,789.00 or as otherwise varied in accordance with **clause 17~~14~~**
2. Local Park	Open space	Construction and completion of the Local Park to the satisfaction of the Council.	Work to be completed before the issuing of the Subdivision Certificate that creates the 991st Final Lot in the Development or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**.	$595,636.00 or as otherwise varied in accordance with **clause 17~~14~~**
3. Sporting Field	Open space	Construction and completion of the Sporting Field to the satisfaction of the Council.	Work to be completed before the issuing of the Subdivision Certificate that creates the 991st Final Lot in the Development or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**.	$10,592,180.00 (for both the Sporting Field and the Organised Sports Facilities) or as otherwise varied in accordance with **clause 17~~14~~**.
4. Organised Sports Facilities	Open space	Construction and completion of the Organised Sports Facilities to the satisfaction of the Council.	Work to be completed by a date to be agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**.	Included in Item 3 above or as otherwise varied in accordance with **clause 17~~14~~**

5. Channel TC02 Works	Water Management	Construct, complete and Maintain (as defined in the Channel TC02 Works WIK Agreement) the Channel TC02 Works in accordance with the Channel TC02 Works WIK Agreement.	Work to be completed by the Completion Date as defined in the TC02 Works WIK~~A~~ Agreement and as required in the Channel TC02 Works WIK Agreement**.** The Developer must also Maintain the Channel TC02 Works for a 2 year period after the Practical Completion Date (as defined in Channel TC02 Works WIK Agreement) of the Channel TC02 Works.	~~$1,798,111 or, if the Minister administering the Act has determined a higher value for this Work following an assessment by IPART, then that amount or as otherwise varied in accordance with **clause 14**.~~ $1,713,071.
6. Culvert Crossings Works	Water Management and Traffic and Transport Management	Construction and completion of the Culvert Crossings Works to the satisfaction of the Council.	A Culvert Crossings Work located in or adjoining a Stage of the Development is to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in that Stage or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause ~~23~~26**.	$~~825~~860,000~~. or, if the Minister administering the Act has determined a higher value for this Work following an assessment by IPART, then that amount,~~ or as otherwise varied in accordance with **clause 17~~14~~**.

7. Detention Basin 3 Works	Water Management	Construction and completion of the Detention Basin 3 Works to the satisfaction of the Council.	The civil works component of the Works to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in Stage 45 of the Development or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**. The embellishment works component of the Works to be completed 12 months after the later of either: (a) the date the civil works component of the Works is completed for the purposes of **clause 24.5~~21.5~~** of this Deed; or (b) 30 June 2020, or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**.	$12,758,500 or~~, if the Minister administering the Act has determined a higher value for this Work following an assessment by IPART, then that amount, or~~ as otherwise varied in accordance with **clause 17~~14~~**.

8. Channel TC01 Works	Water Management	Construction and completion of the Channel TC01 Works to the satisfaction of the Council.	The civil works component of the Works to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in Stage 45 of the Development or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**. The embellishment works component of the Works to be completed 12 months after the later of either: (a) the date the civil works component of the Works is completed for the purposes of **clause 24.5~~21.5~~** of this Deed; or (b) 30 June 2020, or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**.	$9,490,000 or~~, if the Minister administering the Act has determined a higher value for this Work following an assessment by IPART, then that amount., or~~ as otherwise varied in accordance with **clause 17~~14~~**.
9. Gross Pollutant Trap Works	Water Management	Construction and completion of the Gross Pollutant Trap Works to the satisfaction of the Council	A Gross Pollutant Trap Work located in or adjoining a Stage of the Development is to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in that Stage or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**.	$619,900, or~~, if the Minister administering the Act has determined a higher value for this Work following an assessment by IPART, then that amount, or~~ as otherwise varied in accordance with **clause 17~~14~~**.

10. Local Road Culvert Crossing MP10.6	Traffic and Transport Management	Construction and completion of the Local Road Culvert Crossing MP10.6 to the satisfaction of the Council	The Local Road Culvert Crossing MP10.6 is to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in a Stage that the Local Road Culvert Crossing MP10.6 adjoins or is located within or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**.	$88,000, or~~, if the Minister administering the Act has determined a higher value for this Work following an assessment by IPART, then that amount., or~~ as otherwise varied in accordance with **clause 17~~14~~**.
11. Local Road Culvert Crossing MP10.7	Traffic and Transport Management	Construction and completion of the Local Road Culvert Crossing MP10.7 to the satisfaction of the Council	The Local Road Culvert Crossing MP10.7 is to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in a Stage that the Local Road Culvert Crossing MP10.7 adjoins or is located within or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27~~23~~**.	$105,000 or~~, if the Minister administering the Act has determined a higher value for this Work following an assessment by IPART, then that amount., or~~ as otherwise varied in accordance with **clause 17~~14~~**.

12. Co-Located Open Space Works	Open space	Construction and completion of the Co-Located Open Space Works to the satisfaction of the Council	The Co-Located Open Space Works comprising works located on 'Reserve E' and 'Reserve F' are to be completed 12 months after the later of either: (a) the date the civil works component of the Detention Basin 3 Works and Channel TC01 Works are completed for the purposes of **clause 24.5~~21.5~~** of this Deed (and for the avoidance of doubt, this excludes any maintenance periods); or (b) 30 June 2020, or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause ~~23~~ ~~.~~26**. The Co-Located Open Space Works comprising the Reserve 1000 Works to be completed by the later of: (a) 12 months after the date the Development Consent is granted for the Reserve 1000 Works; and (b) 30 June 2021, or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 26**	$~~295,593 or, if the Minister administering the Act has determined a higher value for this Work following an assessment by IPART, then that amount.,~~ $1,860,804 or as otherwise varied in accordance with **clause 17~~14~~**.

13. GRWE Road Works	Traffic and Transport Management	Construction and completion of the GRWE Road Works to the satisfaction of the Council	The GRWE Road Works are to be completed by the later of: (a) 31 December 2019; or (b) in the following stages: (i) Stage 1 GRWE Road Works, prior to the issue of a Subdivision Certificate which creates the 390th Final Lot in Precinct 6 (or such later date as agreed with RMS and Council, acting reasonably and having regard to the reasons for the delay that are outside of the control of the Developer); and (ii) Stage 2 GWRE Road Works , prior to the issue of a Subdivision Certificate which creates the 600th Final Lot in Precinct 6 (or such later date as agreed with RMS and Council, acting reasonably and having regard to the reasons including that the delay is caused by an event outside the control of the Developer).	$6,560,000 or~~, if the Minister administering the Act has determined a higher value for this Work following an assessment by IPART, then that amount, or~~ as otherwise varied in accordance with **clause 17~~14~~**.

14. Reserve 990 Works	Open space	Construction and completion of the Reserve 990 Works to the satisfaction of Council.	Work to be completed by the later of: (a) 9 months after the date the Development Application for the Reserve 990 Works is granted; (b) 31 December 2019, or as otherwise agreed between the parties, subject to the deferral of works provision in **clause 27**.	$870,139.00 or as otherwise varied in accordance with **clause 17**.~~The amount determined by the Minister administering the Act following an assessment by IPART, or as otherwise varied in accordance with **clause 14**.~~
15. TC04 Works	Water management	Construction and completion of the TC04 Works to the satisfaction of Council.	Work to be completed before the issuing of the Subdivision Certificate that creates the first Final Lot in Stage 34 or otherwise as agreed in writing between the Parties subject to the deferral of work provisions in **clause 27**.	$1,018,267, or as otherwise varied in accordance with **clause 17**.
16. TC03 Works	Water management	Construction and completion of the TC03 Works to the satisfaction of Council.	Work to be completed before the issuing of the Subdivision Certificate that creates the first Final Lot in Stage 34 or otherwise as agreed in writing between the Parties subject to the deferral of work provisions in **clause 27**.	$1,468,308, or as otherwise varied in accordance with **clause 17**.

17. Gross Pollutant Traps (Eastern Channel) Works	Water management	Construction and completion of the Gross Pollutant Traps (Eastern Channel) Works to the satisfaction of Council.	A gross pollutant trap work located in or adjoining a Stage of the Development is to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in Stage 34 or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$253,300, or as otherwise varied in accordance with **clause 17**.
18. Gross Pollutant Traps (Western Channel) Works	Water management	Construction and completion of the Gross Pollutant Traps (Western Channel) Works to the satisfaction of Council.	A gross pollutant trap work located in or adjoining a Stage of the Development is to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in that Stage or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$253,300, or as otherwise varied in accordance with **clause 17**.
19. Roundabout Works – Precinct 5 Stage 42	Traffic and Transport Management	Construction and completion of the Roundabout Works – Precinct 5 Stage 42 to the satisfaction of the Council.	Works to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in a Stage that the roundabout adjoins or is located within or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$272,500, or as otherwise varied in accordance with **clause 17**.

20. Roundabout Works – Precinct 6 Stage 51	Traffic and Transport Management	Construction and completion of the Roundabout Works – Precinct 6 Stage 51 to the satisfaction of the Council.	Works to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in a Stage that the roundabout adjoins or is located within or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$272,500, or as otherwise varied in accordance with **clause 17**.
21. Roundabout Works – Precinct 1 Local Park	Traffic and Transport Management	Construction and completion of the Roundabout Works – Precinct 1 Local Park to the satisfaction of the Council.	Works to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in a Stage that the roundabout adjoins or is located within or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$272,500, or as otherwise varied in accordance with **clause 17**.
22. Bus Shelters	Traffic and Transport Management	Construction and completion of 3 Bus Shelters	Parties acknowledge and agree that the Works have been completed by the Council using funds provided by the Developer	$75,000
23. Reserve 995 Works	Open space	Construction and completion of Reserve 995 Works to the satisfaction of Council with the design, quantity and installation locations of embellishment items to be determined by the Council in consultation with the Developer.	Reserve 995 Works to be completed by the later of: (a) 12 months after the date the Development Consent is granted for the Reserve 995 Works; (b) 30 December 2022, or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$8,777,409.00, or as otherwise varied in accordance with **clause 17**.

24. Reserve C Works	Open space	Construction and completion of the Reserve C Works to the satisfaction of Council. For the avoidance of doubt, this contribution relates to the embellishment of part of Reserve C owned by Stockland only.	Parties acknowledge and agree that the Works have been completed.	$143,451.00 being 36% of the value of open space and recreation facilities works within Drainage Basin MM 2.0 identified in 'Appendix E4 of 4' of the CP 21 Contributions Plan , or as otherwise varied in accordance with **clause 17**.
25. Reserve D Works	Open space	Construction and completion of the Reserve D Works to the satisfaction of Council. For the avoidance of doubt, this contribution relates to the civil works and embellishment of part of Reserve D owned by Stockland only. .	The civil works component of the Reserve D Works to be completed prior to the issuing of the first Subdivision Certificate that creates a Final Lot in Stage 34 of the Development or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**. The embellishment works component of the Reserve D Works to be completed 12 months after the later of: (a) the date the civil works component of the Works is completed for the purposes of **clause 24.5**; or (b) 30 June 2022, or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$158,834.50 being 50% of $317,669, being the value of open space and recreation facilities works within Drainage Basins MS 1.5 to MS1.7 identified in 'Appendix E4 of 4' of the CP 21 Contributions Plan, or as otherwise varied in accordance with **clause 17**.

26. Culvert MS1.10 Works	Water management	Construction and completion of Culvert MS1.10 Works to the satisfaction of Council.	Prior to the issuing of the first Subdivision Certificate that creates a Final Lot in Precinct 7 of the Development or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$373,000, or as otherwise varied in accordance with **clause 17.**
27. Channel MS1.12 Works	Water management	Construction and completion of the Channel MS1.12 Works to the satisfaction of Council.	Prior to the issuing of the first Subdivision Certificate that creates a Final Lot in Precinct 7 of the Development or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$744,081, or as otherwise varied in accordance with **clause 17.**
28. Gross Pollutant Trap MS1.11 Works	Water management	Construction and completion of Gross Pollutant Trap MS1.11 Works to the satisfaction of Council.	Prior to the issuing of the first Subdivision Certificate that creates a Final Lot in Precinct 7 of the Development or otherwise as agreed in writing between the Parties subject to the deferral of works provisions in **clause 27**.	$108,700, or as otherwise varied in accordance with **clause 17.**

Schedule 2

(Clause 10)

Land Dedication Plans

Plan on the following page

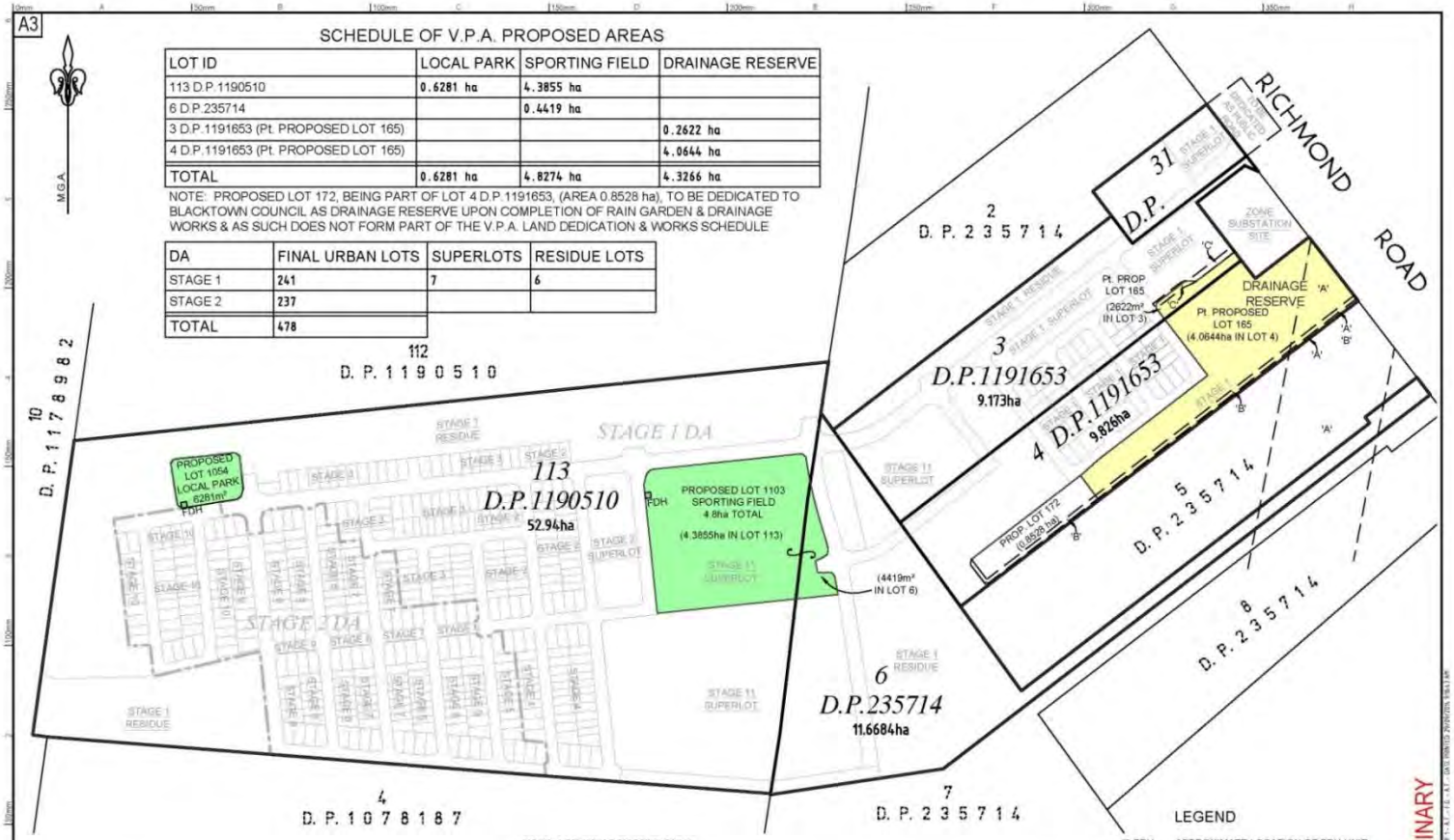
A3

SCHEDULE OF V.P.A. PROPOSED AREAS

LOT ID	LOCAL PARK	SPORTING FIELD	DRAINAGE RESERVE
113 D.P.1190510	0.6281 ha	4.3855 ha	
6 D.P.235714		0.4419 ha	
3 D.P.1191653 (Pt. PROPOSED LOT 165)			0.2622 ha
4 D.P.1191653 (Pt. PROPOSED LOT 165)			4.0644 ha
TOTAL	0.6281 ha	4.8274 ha	4.3266 ha

NOTE: PROPOSED LOT 172, BEING PART OF LOT 4 D.P.1191653, (AREA 0.8528 ha), TO BE DEDICATED TO BLACKTOWN COUNCIL AS DRAINAGE RESERVE UPON COMPLETION OF RAIN GARDEN & DRAINAGE WORKS & AS SUCH DOES NOT FORM PART OF THE V.P.A. LAND DEDICATION & WORKS SCHEDULE

DA	FINAL URBAN LOTS	SUPERLOTS	RESIDUE LOTS
STAGE 1	241	7	6
STAGE 2	237		
TOTAL	478		



NOTE: LOT AREAS BY DEED ONLY

'A' - EASEMENT FOR TRANSMISSION LINES 143.255 WIDE VIDE K149223 & K149224
'B' - PROPOSED EASEMENT FOR SEWER RISING MAIN 5.6 WIDE
'C' - PROPOSED EASEMENT FOR UNDERGROUND CABLES 8 WIDE

LEGEND
FDH APPROXIMATE LOCATION OF FDH UNIT

250 200 150 100 50 0 250
1:5000 @ A3

PRELIMINARY

AMEND. No.	DATE	DETAILS
11	29/09/2014	LOTS AMENDED
10	22/09/2014	LOT AREAS AMENDED
09	22/09/2014	LOT 4 AREA AMENDED

DIAL 1100 BEFORE YOU DIG

Project: PLAN SHOWING PROPOSED PUBLIC RESERVES & DRAINAGE RESERVES IN RELATION TO EXISTING LOT BOUNDARIES FOR VOLUNTARY PLANNING AGREEMENT PURPOSES

Principal: STOCKLAND
Scale: 1:5000 | Date: 7/02/2014 | Datum: | Council Ref: | L.G.A.: BLACKTOWN
Calc'd: A.T. | Drawn: F.G. | Proj Man: A.T. | Client Ref:

CRAIG & RHODES
ABN 77 050 206 981
Level 4, Suite 400
15-19 Cambridge St
EPPING NSW 2121
PO Box 233
EPPING NSW 1710
ACN 050 206 981
DX 4405 EPPING
Tel: 9869-1866
Fax: 9869-2341
reception@crhodes.com.au
www.craigandrhodes.com.au
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90th ANNIVERSARY 1923 - 2013

LOMS ISO 9001 Approved Company

Our Ref: 108-12G L05
Dwg File Ref. (Rev) - Sheet Ref.
108-12G L05 [11] - 1 OF 1

~~3474-8007-7325v1~~

3436-9602-3827v27
BLA_BLA20028_070~~bla_bla19017_011.docx~~

Schedule 3

(Clause 10)

Basin 5 and Channel TC06 Plan

Plan on the following page

LEGEND

- BASIN 5 AND CHANNEL EXTENT OF THIS DA
- STOCKLAND SITE BOUNDARY

PROGRAMME

1. UPPER RETENTION BASIN 5 / KICK AROUND AREA
2. RAINGARDEN
3. LOWER RETENTION BASIN
4. CHANNEL
5. PARK ENTRY / INFORMAL NODE
6. SEATING STEPS
7. INFORMAL NODE / SEATING AREA
8. INFORMAL CROSSING POINT
9. MELALEUCA QINQUENERVIA GROVE

Client: Stockland

Consultants

0 10 20 40m

Revisions | Issue | Date | Description | Drawn | Check

JMD design

190 James Street
Redfern NSW 2016
T (02) 9310 5644 F (02) 9319 4858
info@jmddesign.com.au

Project: BASIN 5 AND CHANNEL LANDSCAPE TREATMENT

Drawing Title: Overall Site Plan

Date: 29.08.2013

Scale: 1:1000

Drawing No.: L02

Issue: Adv

PLANT SCHEDULE

QTY	COMMON NAME	BOTANICAL NAME	POT SIZE
GROUND COVER			
	Creeping monkey	Mimulus repens	45cm
	Creeping myrtle	Myoporum	20cm
	Kangaroo paw species	Anigozanthos	20cm
	Pink kangaroo	Pink Kangaroo Paw	20cm
	Native geranium	Native Geranium	20cm
	Native geranium	Native Geranium	20cm
	Scaevola species	Tasmanica	20cm
MASS PLANTING AREAS ON BATTERS			
TREES			
	Acacia decurrens	Black Wattle	5lt
	Acacia longifolia	Sydney Wattle	45cm
	Acacia parramattensis	Small-leaved Apple	30cm
	Casuarina glauca	Swamp Oak	45cm
	Eucalyptus punctata	Grey Box	30cm
	Eucalyptus tereticornis	Blue Gum	30cm
	Eucalyptus viminalis	White Sallow Eucalyptus	30cm
	Eucalyptus fraxinoides	Ash	30cm
	Eucalyptus nicholii	Nicholi Willow Peppermint	30cm
	Melaleuca styphelioides	Prickly Paperbark	45cm
	Melaleuca linariifolia	Flax-leaved Paperbark	45cm
	Melaleuca ericifolia, Leptospermum	Water Gum	30cm
SHRUBS			
	Acacia baileyana	Bailey's Wattle	
	Acacia saligna 'Stricta'	Stricta Wattle	
	Acacia ulicifolia 'Flat'	Flat Gorse	
	Leptospermum 'Blackthorn'	Pink Cultivar	
	Melaleuca 'Snowflake'		
	Melaleuca linariifolia	Flax-leaved Paperbark	
	Melaleuca nesophila 'Jewel'		
	Melaleuca nesophila 'Purple Pearl'	Purple Jewel Pink	
	Pittosporum tenuifolium	Kohuhu	
GROUNDCOVERS			
	Dianella 'Little Jess'	Little Jess	
	Dianella revoluta		
	Dianella 'Silk Thousand Stars'	Silk Thousand Stars Dianella	
	Hardenbergia violacea	Purple Coral Pea	
	Lomandra longifolia	Spiny-headed Mat-rush	
	Myoporum parvifolium	Creeping Myoporum	
	Scaevola aemula 'Purple Fanfan'		
MATHE WOODLAND			
	Bothriochloa macra	Red Grass	
	Dianella revoluta	Blueberry Flax-lily	
	Dianella 'Little Jess'	Little Jess	
	Dichelachne sciurotrichia	Blue Hair Plumegrass	
	Eragrostis spectabilis 'Velvet'	Velvet	
	Lomandra filiformis	Wattle Mat-rush	
	Lomandra longifolia 'Katrinus'	Lomandra 'Katrinus'	
	Lomandra longifolia	Spiny-headed Mat-rush	
	Poa labillardieri 'Eskdale'	Tussock Grass	
LITTORAL VEGETATION (CHANNEL)			
	Carex appressa	Tall Sedge	
	Carex fascicularis		
	Juncus usitatus	Blunding Club Rush	
	Juncus vaginatus	Common Rush	
	Lomandra fluviatilis 'Wave'	Lomandra Wave	
RAINGARDEN			
SMALL TREES (LARGE SHRUBS)			
	Callistemon salicinus	Willow Bottlebrush	
	Melaleuca ericifolia	Swamp Paperbark	
	Melaleuca linariifolia	Flax-leaved Paperbark	
	Melaleuca nesophila	Pink Tea Tree	
	Melaleuca styphelioides	Prickly Paperbark	
SHRUBS			
	Acacia baileyana	Bailey's Wattle	
	Acacia saligna 'Stricta'	Stricta Wattle	
	Acacia ulicifolia 'Flat'	Flat Gorse	
	Leptospermum 'Blackthorn'	Pink Cultivar	
	Melaleuca nesophila 'Jewel'	Pink Jewel Pink Tea Tree	
	Melaleuca nesophila 'Purple Pearl'	Purple Jewel Pink	
	Pittosporum tenuifolium	Kohuhu	
GROUNDCOVERS			
	Carex appressa	Tall Sedge	
	Juncus usitatus	Blunding Club Rush	
	Juncus vaginatus	Common Rush	
	Lomandra fluviatilis 'Wave'	Lomandra Wave	

LEGEND

- LIMITS OF WORK
- MASTERPLAN LAYOUT BASE
- PROPOSED CONTOURS
- 12.60 — PROPOSED LEVELS
- 1:6 — PRPOSED GRADIENT
- CONCRETE SHAREWAY
- MAINTENANCE ACCESS ROAD - STABILISED CRUSHED SANDSTONE / CONCRETE AT SLOPES
- CONCRETE SEATING STAIRS
- RIP RAP WALL
- SANDSTONE BOULDERS
- SEATING FURNITURE
- EXTEND OF INFORMAL SEATING AREAS STABILISED CRUSHED SANDSTONE
- EXTEND OF TURF AREAS - KIKUYU / COUCH
- EXTEND OF MASS PLANTING AREAS - NATIVE GRASSLAND; REFER TO PLANT SCHEDULE
- EXTEND OF MASS PLANTING AREAS - LITTORAL VEGETATION; REFER TO PLANT SCHEDULE
- EXTEND OF RAIN GARDEN AREAS; REFER TO PLANT SCHEDULE
- EXTEND OF MASS PLANTING AREAS ON BATTERS; REFER TO PLANT SCHEDULE
- SOLITERY TREE; REFER TO PLANT SCHEDULE
- COPSE OF TREES; REFER TO PLANT SCHEDULE

PROGRAMME

1. UPPER RETENTION BASIN 5 / KICK AROUND AREA
2. RAINGARDEN
3. LOWER RETENTION BASIN
4. CHANNEL
5. PARK ENTRY / INFORMAL NODE
6. SEATING STEPS
7. INFORMAL NODE / SEATING AREA
8. INFORMAL CROSSING POINT
9. MELALEUCA QINQUENERVIA GROVE

Client: Stockland

Consultants

0 5 10 20m

Revisions	Issue	Date	Description	Drawn	Check

JMD design

190 James Street
Redfern NSW 2016
T (02) 9310 5644 F (02) 9319 4858
info@jmddesign.com.au

Project: BASIN 5 AND CHANNEL LANDSCAPE TREATMENT

Drawing Title: Landscape Plan - Basin 5

Date: 29.08.2013

Scale: 1:500

Drawing No.: L03

Issue: Adv

Schedule 4

(Clause 10)

Sporting Field Plan

Plan on the following page

LEGEND

1. Multi-purpose playing field (soccer, rugby, AFL, cricket)
2. Terraced seating wall (0.500m high)
3. Amenities buildings (changerooms, toilets, canteen)
4. 2 x Cricket practice nets
5. Playground
6. Dog off-leash area
7. Skate and half court area
8. 2x Irrigation tanks under skate area
9. 1x Irrigation cabinet to school fence
10. Acousitc seating wall to school fence
11. Arrival plaza
12. Emergency gate access
13. Maintenance gate access
14. Turf spectator gathering zone

PARKING

OFF-STREET PARKING TOTAL SPACES = 119

1. Carpark 1: 81 angle spaces (2 accessible spaces)
2. Carpark 2: 38 angle spaces (2 accessible spaces, 1 maintenance vehicle space)

Client: Stockland, ELARA Marsden Park

Consultants: CHROFI, Total Irrigation Designers, Hollis Partners, Cardno

0 5 10 20m

Revisions	Issue	Date	Description	Drawn	Check
	Adv	19.09.14	For Discussion	CC/CW	CW/JG

JMD design

190 James Street
Redfern NSW 2016
T (02) 9310 5644 F (02) 9319 4858
info@jmddesign.com.au

Project: Marsden Park Playing Fields
Drawing Title: Landscape Plan
Date: 19.09.14
Scale: 1:500@A1, 1:1000@A3
Drawing No.: L-01
Issue: Adv

Schedule 5

(Clause 10)

Local Park Plan

Plan on the following page

Client	Revisions	Issue	Date	Description	Drawn	Check			Project	Date	Drawing No.	Issue
Stockland		A	25.11.13	FOR VPA	JH	JG	JMD design	190 James Street Redfern NSW 2016 T (02) 9310 5644 F (02) 9319 4858 info@jmddesign.com.au	MARSDEN PARK Drawing Title NEIGHBOURHOOD PARK	26.11.13 Scale 1: 400 @ A3	L01	A
		B	26.11.13	FOR VPA	JH	JG						

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3436-9602-3827v27
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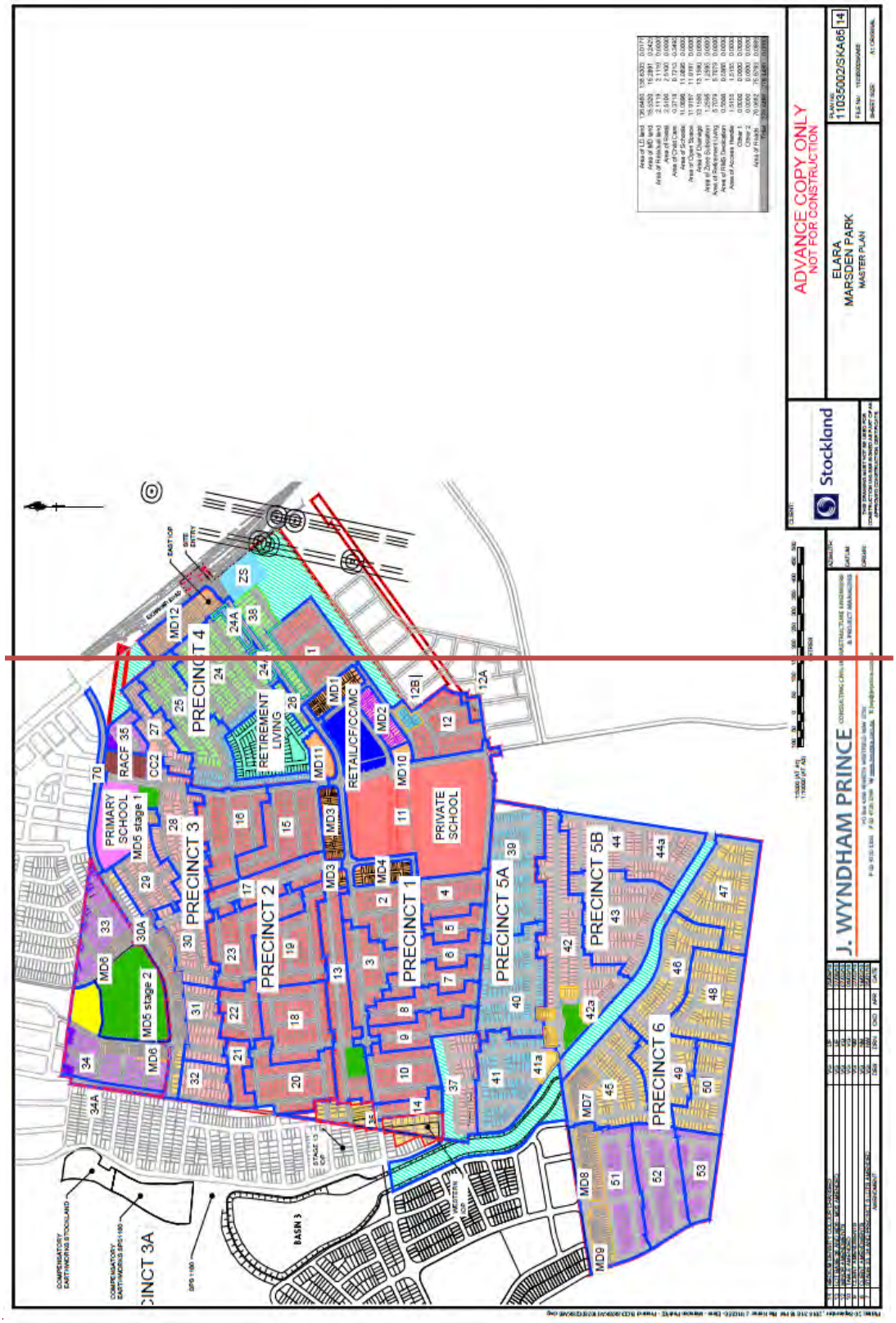
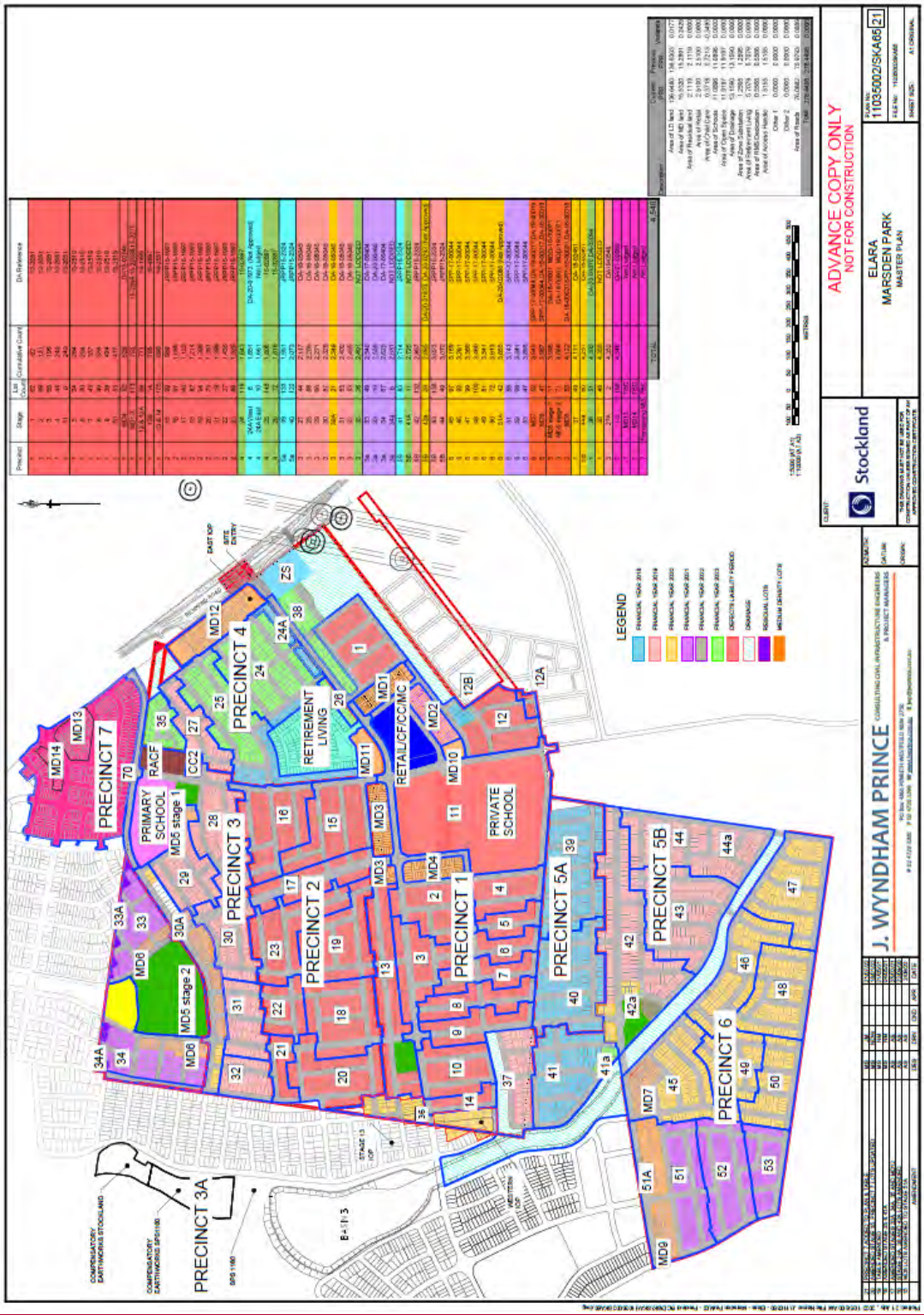
Schedule 6

Precincts Plan

Plan on the following page

draft


ADVANCE COPY ONLY
NOT FOR CONSTRUCTION
ELARA
MARSDEN PARK
MASTER PLAN
Stockland
J. WYNDHAM PRINCE
PRECINCT 1
PRECINCT 2
PRECINCT 3
PRECINCT 4
PRECINCT 5A
PRECINCT 5B
PRECINCT 6
PRIMARY SCHOOL
PRIVATE SCHOOL
RETAIL/CF/CC/MC
RETIREMENT LIVING
RACF 35
MD5 stage 1
MD5 stage 2
BASIN 3
ZS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MASTER PLAN
Stockland
J. WYNDHAM PRINCE
LEGEND
PRECINCT 1
PRECINCT 2
PRECINCT 3
PRECINCT 3A
PRECINCT 4
PRECINCT 5A
PRECINCT 5B
PRECINCT 6
PRECINCT 7
PRIMARY SCHOOL
PRIVATE SCHOOL
RETIREMENT LIVING
RETAIL/CF/CC/MC
RACF
MD5 stage 1
MD5 stage 2
MD1
MD2
MD3
MD4
MD6
MD7
MD9
MD10
MD11
MD12
MD13
MD14
CC2
ZS
EAST IOP
SITE ENTRY
COMPENSATORY EARTHWORKS STOCKLAND
COMPENSATORY EARTHWORKS SPS1160
STAGE 13 IOP
WESTERN IOP
BASIN 3

Schedule 7

Specifications

Part 1 – Specifications for the Local Park, Sporting Field and Organised Sports Facilities

General Requirements

- Provide building plans and specifications to councils building maintenance section for review and approval prior to going to tender.
- Councils Development Services Unit shall be the principal Certifying Authority for new construction works.
- Site inspections by council building maintenance staff during construction
- Only use copper pipe work for potable and recycled water.
- Solenoid valve installations from Water Conservation Services Australia are to be inspected by the supplier and certified in writing by the supplier stating that the systems have been installed as per there recommended specifications.

The following items are required from the Builder prior to final occupation certificate:

- Evidence of Sydney Water approvals, inspections for recycled water, sewer & water connections to the boards mains. Sydney Water Certificate of Compliance required.
- Evidence of Endeavour Energy approvals and related inspections.
- As-build drawings for all services and structures, maintenance manuals, specifications & drawings in pdf and dwg format.
- Maintenance manuals listing all brand names and suppliers of materials and fittings used.
- Termite treatment Certificate.
- Structural Engineer's Certificate.
- Camera inspection of all sewer lines

General Building design requirements.

- The canteen and storage areas need to be separated from the change rooms and toilets via a breezeway of minimum depth 5m by width of roof covering.
- The minimum covered area to canteen servery shall be 30 m²
- The minimum area/width of roof covering over access doors to toilets/change rooms etc shall be a minimum 2m wide by full length of building.
- The use of natural cross flow ventilation is to be maximised while maintaining privacy.
- All doors are to be 850mm wide allowing for disabled access to all areas of the building.

- Separate disabled toilet with shower required.
- Showers and toilets need to be located so the solenoid valves and plumbing is accessible via a services duct 1m wide minimum with floor waste.
- All structural steel is to be hot dipped galvanised. No timber framing.
- A 1.8m x 3m x 2.1m high (internal dimension) bin enclosure located away from the building and adjacent to the car park is required. The enclosure shall consist of a steel RHS galvanised frame with galvanised wire mesh panels welded to the frame (walls and roof). Double gates to the 1.5m side. The enclosure shall be on a concrete slab with layback to car park.
- Require Endeavour Energy E-Key locking for meeter room. Provide key access system for Sydney water access. Prefer electronic metering for utilities where possible.

Minimum floor space requirements are required the following areas.

- Canteen – 20 m²
- Canteen store room – 10 m²
- Store #1 – 25 m²
- Store #2 – 25 m²
- Female Toilets – 15 m²

  3 cubicles and basins required.
- Male toilets – 15 m²

  2 cubicles, 3 urinals and 2 basins required.
- 2 Change rooms - 50m² each

  One toilet, one basin, 3 shower block and 15m – 20m lineal meters of bench seating required to each change room. Change area 30m² minimum exclusive of showers, WC's and passage ways.
- Officials room – 9 m²

  Shower, toilet, basin and bench seating required
- Electrical cupboard - 3m x 0.9m
- Cleaners cupboard – 3 m²

- Disabled toilet & Shower

The following is a Summary of generic material specifications that need to be applied to council amenities buildings the items are, but not limited to the following summary.

Walls

Walls shall be coloured concrete/masonry besser block, smooth face with flush joints. All walls to canteen and storage areas are to be concrete filled, reinforced vertically & horizontally block work.

Anti-Graffiti Treatment

Confirm requirements with Council for Anti graffiti coating coating systems for specified for building elements.

Roof

Shall be minimum 0.48 "Colorbond" finish roofing single length. With foil faced insulation blanket. Ovoid the use of box gutters, eaves gutters preferred.

Skylights are to be polycarbonate. Install galvanised 50 x 50 expanda mesh steel to the under side of skylights. Attach weld mesh to steel roof framing.

Stormwater harvesting

Stormwater from the building is to collected and stored in in-ground concrete tank. All stormwater is to be filtered through an appropriate stormwater filtration system prior to storage. Collected stormwater is to be used for ground irrigation and to be interconnected to the on-site sports field irrigation system.

Fall Arrest System

Provide a fall arrest system to comply with AS/NZS 1891.2. Predominantly the system will be Sayfa static line fall protection roof access system with single fall arrest points where it is not practical to use a static line.

The aim is to provide full access to the whole roof area. Generally the roof access layout requires a static line approximately 2.5m from the gutter line/perimeter of the roof, with fall arrest points covering areas not accessible by a static line for roofs.

The fall arrest product specification is as follows.

Roof access products specified below are supplied by Sayfa Systems 1300 301 755
http://www.sayfa.com.au/images/uploads/sayfa_product_catalogue_1.pdf

Anchor points:- AP 130.1 top mount anchor point for metal roof

Static line:- SL 1 Top mount static line system

Ladder access point / First man up point

Ladder bracket (LD 401) and AP 115.200 Anchor point strop & AP 130.10

Fall Arrest System Design

Capacity: Provide protection for a maximum of 2 workers connected to the system at any one time.

Access: Provide safe access to the following:

- The full length of gutters.
- Roof lights.
- Roof mounted mechanical plant.
- Roof areas within 2.5 m of a fall hazard not otherwise protected by parapets or guard rails of 1000 mm minimum height.
- Personnel attachments to travel freely along the cable and pass over the intermediate supports without detaching from the system.

Provide a roof access system design prior to installation for approval by council.

Provide inspection, testing and certification by a Sayfa registered installer upon completion of the installation.

Provide a laminated copy of the installed roof access system marked on a roof plan.

Security To Ceilings:

(To kiosk and storerooms only) Glue and screw 10mm plywood sheeting to underside of roof with screw fixings 200 c/c max.

Eave linings (if required) need to be vandal resistant, the use of materials such as panelrib on plywood or compressed fibre cement sheeting backed with plywood would provide adequate protection.

Soffit Linings

BHP Building Products “Panelrib” 0.35 steel profile sheeting – colorbond finish. Fixing as per manufacturers recommendations. Or 6mm fibre cement sheeting on 10mm plywood fixed to ceiling joists.

Sanitary Fittings

- Stormtech continuous grate to shower drainage
- Each WC flushing system to be operated by a stainless steel touch plate control unit and solenoid valve as per specifications from Water Conservation Services Australia.
- All WC pans are to be stainless steel S trap pans.
- Inspection openings outside of building prior to connection with main sewer line

Plumbing fittings

- Stainless steel washbasins with appropriate tap holes complete with brackets as manufactured by Stainless Metal Craft Pty Ltd.
- Timed Showers are to be operated by a stainless steel touch plate control unit and solenoid valve as per specifications from Water Conservation Services Australia. Other alternative timed shower products may be considered. Confirm details with Council prior.
- Shower roses to be H.G. Thornthwaite-vandal resistant showerhead - VR105
- Backflow prevention devices to be Watts/RMC model.
- All boiling water units to be Zip Hydroboil. The unit should be controlled via a timer to prevent it running 24/7.

Location	**Product Information**
Hot water heater cupboard / Services duct	• Timed Showers are to be operated by a stainless steel touch plate control unit and solenoid valve as per specifications from Water Conservation Services Australia.
Change rooms and officials shower	• Timed Showers are to be operated by a stainless steel touch plate control unit

	and solenoid valve as per specifications from Water Conservation Services Australia.
Change rooms and officials showers	**Rada VR105 with 6L/min flow regulator** Part No. 09877
Basins in male and female toilets and change rooms	**Presto 605 S** Part No. P64614
Tempering of water to change room showers (locate in services duct)	**Rada 215dk for exposed installation** Part No.40861EK
Tempering of water to official shower (& disabled shower (separate depending on layout?))	**Rada 215dk in recessed galvanised box & stainless steel lid with cold water feed** Part No. 4861RB300CF (solenoid valve could be located in box)
Tempering of water to kiosk basin	**Rada 215dk in recessed galvanised box & stainless steel lid with cold water feed** Part No. 40861RB300

Typical Building Fixture Schedule

Space	Fitting	Description/Code	Supplier
Showers	Shower	Vr 105 Concealed mounting vandal resistant shower fitting	H.G Thornthwaite
Accessible WC	WC Pan	A8851-DIS "S" Trap Well Faced s/steel pan (disabled) rear fixed with seat fixing holes and seat. Complete with hinged closed front integral contoured seat. (black) WC flushing system to be operated by a stainless steel touch plate control unit and solenoid valve	RBA Group Water Conservation Services Australia.
	Basin	SWB-D Security Wash Basin complete with one taphole & brackets & crome waste pipe	Stainless Metal Craft

		Ex 302 Pillar cock (mm)	Enware
	Shower	Enware EX364 shower set with sliding/hand held shower & 900mm stainless steel rail and fixings.	Enware
Female WC	WC Pan	A8851. “S” Trap Wall faced S/steel pan rear fixed WC flushing system to be operated by a stainless steel touch plate control unit and solenoid valve	RBA Group Water Conservation Services Australia.
	Basins	SWB- 2Security Wash Basin complete with one taphole & brackets & crome waste pipe Presto 605 S Push button basin tap (cold security version) Model P64614	Stainless Metal Craft Thornthwaite Technologies
Male WC	WC Pan	A8851. “S” Trap Wall faced S/steel pan rear fixed WC flushing system to be operated by a stainless steel touch plate control unit and solenoid valve	RBA Group Water Conservation Services Australia.
	Urinals	Stainless steel	RBA Group
	Basins	SWB-2 Security Wash Basin complete with one taphole & brackets & crome waste pipe Presto 605 S Push button basin tap (cold security version) Model P64614	Stainless Metal Craft Thornthwaite Technologies
Change 1 & Change 2	WC Pan	A8851. “S” Trap Wall faced S/steel pan rear fixed	RBA Group

		WC flushing system to be operated by a stainless steel touch plate control unit and solenoid valve	Water Conservation Services Australia.
	Basins Shower	Presto 605 S Push button basin tap (cold security version) Model P64614 Stainless steel touch plate control unit and solenoid valve & VR 105 Shower fitting	Thornthwaite Technologies Water Conservation Services Australia.

Officials	WC Pan	A8851. “S” Trap Wall faced S/steel pan rear fixed WC flushing system to be operated by a stainless steel touch plate control unit and solenoid valve	RBA Group Water Conservation Services Australia.
	Basin Shower	SWB- 2Security Wash Basin complete with one taphole & brackets & crome waste pipe Presto 605 S Push button basin tap (cold security version) Model P64614 Stainless steel touch plate control unit and solenoid valve & VR 105 Shower fitting.	Stainless Metal Craft Thornthwaite Water Conservation Services Australia.
Kiosk	Sink	Clark 1.5 End bowl (LH) kitchen sink Model Benchmark 2007 with 3 tapholes Enware CS309 adjustable sink set with SP010 sink spout and SP301 aerator	Clark Enware
	Basin	SWB- 2Security Wash Basin complete with one taphole & brackets & crome waste pipe	Stainless Metal Craft

		CS306 basin set (jumper valve anti vandal) with low height basin spout	Enware
	Boiling Water	Zip Hydroboil 7.5 litres in stainless steel	Zip on timer
Generally to WC's and change rooms.	Hose Taps	Key operated Series Model VP350F 15mm female	Enware

Warm Water

Provide 2 x 400L 3 phase (6kw/phase) commercial hot water units for showers. In the Kiosk to the underbench provide a 50 litre water heater equal to Rheem Model no. 111 050, complete with isolation switch.

Provide mains pressure warm water systems to give warm water to the following fixtures:

- Showers to Change Rooms
- Disabled Toilet and shower
- Officials shower
- Sink to kiosk.

Warm water system to include, but not be limited to

- Thermostatic mixing valves
- Piping
- Insulation

Thermostatic mixing valves to be RADA 215 Series by thornthwaite technologies.

Thermostatic mixing valves to be suitable for flows up to 0.25 litres/second

Include built-in-non-return valves and strainer

Be installed with approved hot and cold water isolating valves

Be installed within lockable semi-recessed stainless steel valve enclosures at high level in services duct

All pressure drops must be taken into account for the required flow rate, with the total pressure drop then compared to available dynamic pressure on site.

Toilet Partitioning

Shall be vandal resistant construction. Confirm system details with council prior to construction. Partition to be 200mm clear of the floor generally supported on aluminium angles and C.P legs and complete with aluminium wall channels and heads and C.P. angle brackets at Junctions.

Finish shall be factory applied two pack baked polyurethane gloss in selected colour.

Doors to toilet partitions shall be hung on spring loaded removable hinges and complete with indicator bolts, and one coat hook bumper ABS for partitions, all to selected colour.

Toilet Tissue Dispensers

Toilet paper towel dispensers shall be steel interleaf dispenser code 4404 from supplier Kimberly Clark.

Electrical

Meter Board

The Builder shall obtain and install meter in switchboard as required by the supply authority

Manual control switch for the Change Room HWU's shall be located in switch cupboard together with manual override switch to external building lighting/photo-electric cell.

AS 3000 wiring rules figure 2.18 & 2.15 call for a minimum of 600mm clearance from the open hinged panel. All switch rooms in that house Metering Equipment need to be at least 2 meters wide.

Distribution / Switchboard

In the Electrical Cupboard provide Distribution / Switchboards to serve the internal and external building outlets, the field lighting and the field irrigation controller, provide switches for the separate circuits for light and power. Field lighting and irrigation to be installed on separate distribution boards .Provide appropriate switches and circuit breakers as required by the Supply Authority. 200Amp three phase supply is the minimum required with an allowance of 10 percent above the maximum potential load if 180 Amps per phase is exceeded. Allow for 6 spare circuits in distribution board for future expansion of services.

kitchen distribution board is required to be installed in the kitchen store room

A manual control switch for the Change Rooms HWU's shall be provided in the Electrical Cupboard as well as a manual override switch to the external building lighting / photo-electric cell.

Provide double wall mounted GPO in the Electrical Cupboard where shown for field irrigation and lighting controller. Also provide a 3 phase power outlet.

Wiring

All electrical wiring shall be concealed and installed within the ceiling space from the switchboard in the Amenities Building. All lighting circuits, shall be controlled direct from the Electrical distribution board located in the kitchen store room.

Circuit Breakers

Miniature moulded case type shall be used for all sub circuits in this installation and shall comply with AS 3111. Two phase and three phase circuit breakers shall be of the multipole type with a common tripping device.

All moulded case circuit breakers shall incorporate thermal-magnetic tripping and arc extinguishing features.

All power circuits shall be R.C.D type. Separate Circuits for GPOs to fridges, not R.C.D type (min 2)

Contactors

Contactors shall be of the double pole air break type suitable for operation on 415 volts with 240 volt AC operating coils.

All contactors shall be suitable for uninterrupted duty and Utilisation Category AC3 in accordance with AS 1029.

Approved manufacturer of contactors BHI, Siemens, Sprecher and Schuh.

Fuses

All fuses shall comply with AS 2005 Part 1 and 2 for rupturing capacity fuses.

All fuse holders shall be of the fully moulded type to GEC Red Spot or approved equivalent.

General Purpose Outlets

General purpose outlets shall be 10A or 15A capacity combination type switch and three pin receptacle flat pin type, with impact resistant face plate suitable for inductive loads.

All outlets shall be mounted flush with the building finish.

Throughout the installation the polarity of terminals in all similar plug receptacles shall be the same.

Single phase socket outlets shall be 10A or 15A capacity as shown on the drawings, with an IP56 or better rating.

Isolating Switches

Isolating switches shall be of the on-load-make on-load break type. The switches shall operate in all active conductors.

The switches shall be labelled "Isolating Switch".

The isolating switch shall be capable of withstanding without damage a short circuit current applied at the load side pending operation of the associated fuses.

Light Fittings

External and internal light fittings shall be Cellite CEL series maximum security vandal resistant lighting. External light fittings are to be operated by one photoelectric cell (equal to Omron) mounted on roof.

Light Switches

Light switches shall be single pole rocker action with silent operating mechanism with contacts rated at 10A minimum and suitable for inductive loads.

Switches shall be flush mounted with common flush plates.

Field lighting

100 Lux Minimum for field lighting required, with the ability to switch down the lighting to half capacity. Each field is to be individually switched. Use Sylvania Briteline 2000 field lights. The

average Lux level design should be above the minium requirements in order to allow for a maintenance provision as the lead time for bulb replacement can be up to 4 weeks.

Use GM poles or similar, install as per manufactures recommendations. Maximum tower height shall be 28m. Mount control gear in pole at base, all lights to be individually fused.

Lights are to be operated from remote control (FMR-240 Receivers and FMT-301 Remote) Remotes to be made operational by time clock between the hours 5pm and 10pm. Controllers and receivers to be mounted separately to the switchboard in their own clear enclosure. Link for the manufacturers of the product http://www.elsema.com/index.html

The purpose of the time clock is to prevent the lights operating outside the hours of 5pm to 10pm.

Do not use Smart wiring (Dynalite) systems, use relays / contactors in the switch board room with switched cabeling to individual poles.

All of Councils playing fields are currently switched on with ELSEMA FMR 240 receivers and FMT 401 remotes. These items are readily available and don't require keys or locks for parks committees to operate them nor do they require them to access any switch rooms(OH&S). These products can be purchased at any reputable wholesaler and do not require a specialist technician to maintain them. . This receiver in turn operates a contactor for the switching on of the field lighting. All of these items are located within the main switch room and do not require switchboards at every pole.

Blacktown City Council is currently investigating installing a new system that will be compatible with all of its parks to replace the current remote controlled system. This system will be operated by mobile phone and access codes, also having a master control from Councils manager of parks and reserves for wet weather control.

Steel Doors & Frames

The Builder shall supply and install steel doors and frames to door openings.

Frames shall be built into the block openings with clips, as supplied by the manufacturer, built into the blockwork bed joints. Frames shall be grouted up with 3:1 sand:cement grout as work proceeds. Frames and doors shall be fixed in strict accordance with the manufacturer's written instructions and shall be complete with striker plate and hinges.

- **Canteen**

  Austral monsoon roller shutter to servery, Model H11/H12 with Rivers 3 point locking bottom rail and 50 x 0.8mm galvanised steel slat with lock-in guardian side guides. Side guides need to extending 500mm below bench height. External access door and frame to be Rivers

4 point locking system, series 420. The builder should allow for supply and fix of these items by the supplier.

- **Canteen store**

  Internal access is required from canteen to the canteen store.

- **Store 1 and 2**

  Austral monsoon roller shutter Model H11/H12 with Rivers 3 point locking bottom rail and 50 x 0.8mm galvanised steel slat with lock-in guardian side guides. Provide Wicket door if the roller door is required to be chain operated. The builder should allow for supply and fix of these items by the supplier.

- **Female Toilets, Male toilets and Change rooms.**

  Construct doors with steel frame detailed from 65 x 35 x 2 Duragal steel RHS sections. Provide two ventilating screen infill panels to each leaf of 3 mm thick Galvabond steel sheet punched out with 12.7mm holes at 17mm centres, with a solid minimum 15mm (i.e., unpunched border) at the perimeter of all panels. Note this will require custom punched panels. Four possible manufacturers of such panels are Arrow Distributors (9609 2222) , W.H. Williams and Sons P/L (9647 1277), Richardson Pacific and Lockers.

  The screen panels shall be fixed to the steel frame by welding of a Galvabond steel 10 x 3 steel flat stop and the pop rivet fixing of 10 x 10 x 3 Galvabond steel standard or purpose made cold formed angle. Allow to cut out for lock and fix two door pull handles as hereafter specified. (Refer to Aliberty Drive amenities for example)

- **Officials room**

  Doors and frames to be lietzke Security 2 Door. (9632977)

- **Electrical cupboard**

  Doors and frames to be lietzke Security 2 Door. (9632977)

  Key cylinder (E2002) to suit Electricity Authority key (dual cylinder mortice lock)

Hardware

All locks shall be "chrome" finish, and as per schedule on drawings.

Special Keying System – the builder shall provide a “Master Keyed System” by Independent Locksmiths, phone 96335877 quoting Broach for parks masterlocks:

A Master Keyed System is one where each lock has its own individual key which will not operate any other lock in the system, but where all locks in the system can be operated by one master key, and as per Council's system.

The builder shall also supply and install stainless steel spring hinges, indicator bolts and door bumpers to all toilet partition doors as manufactured by "EFCO"

Bench Seating To Change Rooms

To Change 1 and 2 provide continuous steel bench seating at walls. To be as manufactured by Steel Post and Rail Pty Ltd ('ph. 9725 5604) comprising three hollow slats each 108 x 38 Locsteel in 'Off white" Colorbond finish, floor and wall mounted with 50 x 50 x 5 galvanised brackets spaced, to give an overall depth of 400 and height off the floor of 450. Fix to the wall and floor with M10 x 50 galv. steel bolts into chemical anchors. Where seat slats continue to walls at ends provide galv.'L' bracket as before specified with two additional M10 x 50 galv. bolts to chemical wall anchors fixing through the top angle into the return wall.

Provide steel hooks min 10mm dia welded to steal backing strap anchored to wall above benches.

Kiosk

Stainless Steel Sheet To Servery/bench

Supply and fix 1.0mm thick stainless steel sheet servery formed to shape with 100mm splashback. Sheet shall be turned down and under front edge.

Sink unit shall be stainless steel with integrated double bowls 400 x 400 x 250 deep.

Bench

To Kiosk, is to be stainless steel construction with open shelf below. Bolt fixed to block wall using galvanised masonry anchors.

Bench top to be stainless steel with HMR board glued to underside of bench top. Mid-shelf to be stainless steel with 25 thick HMR particleboard or HMR MDF board.

Provide 3 Lm of 3 row shelving 300 deep. Shelving shall be constructed of 16mm thick HMR laminated particleboard of approved manufacture with all exposed edges laminated edge stripped to match.

STEEL SHELVING FOR STORE. 1. & 2.

Provide in Kiosk Store . zinc coated steel dry store shelving standard units. To be 450 deep and 1800 high with back bracing. Provide three units, two 1200 long, all to have four zinc coated mesh adjustable shelves.

In Store 2. provide two shelf units equal to Steelbuilt from steel sheet with powder coat finish of colour to be selected from the standard colour range, each to be 2175 high, 1200 wide and 450 deep with fixed top and base shelves and four adjustable shelves.

WALL & FLOOR TILING:

The Builder shall supply and fix floor (ceramic and quarry) and wall tiles (ceramic) to the following locations:

Showers, provide ceramic floor tiles with R12 slip resistance and grading tiles to fall floor wastes.

Kiosk and Kiosk Store floors; provide 200 x 200 vitrified tiles with R12 minimum slip resistance bedded on 3:1 sand:cement , generally flat but graded to fall locally near handbasin to floor waste as shown. Provide 150mm high coved quarry tile skirting around Kiosk walls. At doors provide quarry tiles with bullnose of matching colour. All floor and wall tiles within the Kiosk and store to be installed to the requirements of AS4674: Design, construction and fit-out of food premises and the Food Act 2003. A alternative option instead of using floor tiles, is to use Roxset epoxy flooring finish (used in commercial kitchens) as used at Best Road Amenities.

Provide ceramic 150 x 150 gloss 6mm thick wall tiles to the following areas, Showers to 2100 height. In Male Toilet Urinal recess up to 1650 height to wall behind urinals and for 900 run at each side return wall, In Kiosk, to 2100 above FFL. Splashbacks 750 high at the rear of all handbasins.

Wall tiles shall be grouted up with white cement grout and cleaned off thoroughly before dry. At vertical corners and against steel members provide 5mm wide white silicone sealant joint with backing rod.

Floor tiles to be grouted up with grey cement grout and cleaned off before dry. All grout is to epoxy based and mould resistant.

Doorways where shown, to be bull nosed leading edge and cove tiles to Kiosk to colour match body tiles.

All tiling is to be epoxy grouted

Concrete floor finishes

Apply a non-slip finish to the exposed internal concrete floors, ASBRA Suregrip No 5 granules, by Asbra Safety Flooring Products

Sample of pigmented concrete approximately 300 x 300mm.

PRE-APPROVED SAMPLE: The Superintendent will make available to the Contractor a pre-approved sample of the pigmented concrete indicating the colour to be achieved.

Broom swept finish shall be generally to external spaces and stair treads.

PERFORATED METAL SCREENS:

All steelwork to be hot dipped galvanised – no paint finish required

The Builder shall supply and fix ventilation screens. The screens shall be secured with in frames with a double rebate profile with 3mm Galvabond perforated infill panels.

A alternative to the above would be to use lockers woven steel fabric in place of perforated infill panels. http://www.locker.com.au/download_catalogues.asp

Please provide samples of mesh proposed and fixing details for approval prior to manufacture.

Supplier contacts

Austral Monsoon – 98923188

Rivers locking system

Lietzke Australia - 96329777

Water Conservation Services Australia - Contact Roger Curry 9971 1014.

Thornthwaite Technologies- 94174466

RBA Group-95709268

Stainless Metal Craft-

Cellite- Moonlighting Australia - 9838 7732

Independent Locksmiths – 96335877

Part 2 – Specifications for the Basin 5 and Channel TC06

On the following pages

DATE PLOTTED: 3 February 2014 1:56 PM BY : DAVID COLEMAN (SYDNEY)

GENERAL

1. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL CIVIL WORKS SPECIFICATION 2005.
2. BLACKTOWN CITY COUNCIL DETAILS TO BE USED WHERE POSSIBLE.

SITEWORKS NOTES

1. ORIGIN OF LEVELS:- REFER SURVEY NOTES.
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO CARDNO.
3. MAKE SMOOTH CONNECTION WITH EXISTING WORKS.
4. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
5. BASE AND SUB-BASE LAYERS ARE TO BE INSPECTED AND TESTED BY AN INDEPENDENT GEOTECHNICAL TESTING AUTHORITY TO LEVEL 1 RESPONSIBILITY AS DEFINED IN AS3798.
6. PROVIDE TOPSOIL IN ACCORDANCE WITH DETAIL REFERRED TO IN THIS PACKAGE.
7. ALL BASECOURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.T.A. FORM 3051, COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER $50m^3$ OF BASECOURSE MATERIAL PLACED.
8. ALL SUB-BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.T.A. FORM 3051, AND COMPACTED TO MINIMUM 95% MODIFIED DENSITY IN ACCORDANCE WITH A.S 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER $50m^3$ OF SUB-BASE COURSE MATERIAL PLACED.
9. AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL IN (8) A CERTIFIED RECYCLED CONCRETE MATERIAL COMPLYING WITH R.T.A. FORM 3051 WILL BE CONSIDERED. SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF CARDNO.
10. SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THIS SHALL BE CLEARLY INDICATED IN THEIR TENDER AND THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.
11. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED BY OTHERS, (eg. ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.

BULK EARTHWORKS NOTES

1. ORIGIN OF LEVELS: REFER SURVEY NOTES
2. STRIP ALL TOPSOIL/ORGANIC MATERIAL FROM CONSTRUCTION AREA AND REMOVE FROM SITE OR STOCK PILE AS DIRECTED BY SUPERINTENDENT.
3. COMPACT FILL AREAS AND SUBGRADE TO NOT LESS THAN:

LOCATION	STANDARD MAXIMUM DRY DENSITY (SMDD) (AS 1289 E 5.1.1.)
UNDER BUILDING SLABS ON GROUND	98% SMDD
UNDER ROADS AND CARPARKS	98% SMDD
LANDSCAPED AREAS UNLESS NOTED OTHERWISE	95% SMDD

4. FOR NON COHESIVE MATERIAL, COMPACT TO NOT LESS THAN:

UNDER ROADS	6	80% DENSITY
OTHER AREAS		75% DENSITY

5. FREQUENCY OF COMPACTION TESTING SHALL BE NOT LESS THAN :-
   (A) 1 TEST PER $200m^2$ OF FILL PLACED PER 300 LAYER OF FILL.
   (B) 3 TESTS PER VISIT
   (C) 1 TEST PER $1000m^2$ OF EXPOSED SUBGRADE
   TESTING SHALL BE "LEVEL 2" TESTING IN ACCORDANCE WITH AS 3798 (1996).
6. FILLING TO BE PLACED IN MAXIMUM 200mm - LOOSE LAYERS AND COMPACTED TO 98% SMDD.
7. NO FILLING SHALL TAKE PLACE TO EXPOSED SUBGRADE UNTIL THE AREA HAS BEEN PROOF ROLLED IN THE PRESENCE OF THE SUPERINTENDENT AND APPROVAL GIVEN IN WRITING THAT FILLING CAN PROCEED.
8. REFER TO THE GEOTECHNICAL REPORT PREPARED BY GEOENVIRO CONSULTANCY PTY LTD DATED JAN 13 FOR SITE PREPARATION REQUIREMENTS.
9. EXCAVATED MATERIAL NOT TO BE USED AS STRUCTURAL FILL UNLESS APPROVED BY GEOTECHNICAL ENGINEER.
10. PROOF ROLL EXPOSED SUBGRADE & MINIMUM 10 PASSES WITH A 10 TONNE (MIN) DEAD WEIGHT SMOOTH DRUM VIBRATORY ROLLER TO DETECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER ROLLER)
11. EARTHWORKS TO BE INSPECTED & TESTED BY AN INDEPENDENT GEOTECHNICAL TESTING AUTHORITY TO LEVEL 1 RESPONSIBILITY AS DEFINED IN AS3798

EROSION & SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF EROSION AND SEDIMENTATION TO THE SATISFACTION OF COUNCIL, DEPARTMENT OF WATER AND ENERGY (DWE), SYDNEY WATER, THE DEPARTMENT OF ENVIRONMENT,CLIMATE CHANGE AND WATER NSW (DECCW). TO THIS END, THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE DRAWINGS SHALL ONLY BE USED AS A GUIDE BY THE CONTRACTOR, AND SHALL REPRESENT THE MINIMUM REQUIREMENT ONLY.
2. THE CONTRACTOR SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS DOCUMENTED OR AS OTHERWISE DIRECTED BY THE SUPERINTENDENT.
3. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH
   a. LOCAL AUTHORITY REQUIREMENTS
   b. EPA REQUIREMENTS
   c. NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION", 4th EDITION, MARCH 2004.
4. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
5. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
6. CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

LAND DISTURBANCE

7. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
   (A) INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
   (B) CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
   (C) INSTALL SEDIMENT BASIN AS SHOWN ON PLAN
   (D) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
   (E) UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL

8. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
9. PROVIDE BITUMEN STRAW MULCH AND SEED TO DISTURBED AREAS IN ACCORDANCE WITH SPECIFICATION.
10. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

SEDIMENT CONTROL

11. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.
12. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
13. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
14. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS

15. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
16. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
   (A) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE
   (B) ENSURING THAT NOTHING IS NAILED TO THEM
   (C) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS.
      (I) ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICH EVER IS THE GREATER
      (II) A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH
      (III) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM.

NOISE

EPA AND COUNCIL REQUIREMENTS MUST BE ADHERED TO REGARDING LEVEL OF NOISE AND WORKING HOURS TO ENSURE THAT RESIDENTS AND OTHER APPLICABLE NEIGHBORS TO THE SITE ARE NOT DISTURBED UNREASONABLY. THE GENERATION OF NOISE MUST BE MINIMISED.

DUST

DUST MUST BE MINIMISED TO ENSURE THERE IS NO HEALTH RISK OR LOSS OF AMENITY.

STAGING OF WORKS

STRIPPING WORKS ARE TO BE STAGED TO MINIMISE EXTENT OF EXPOSED AREA. WEATHER CONDITIONS TO BE ASSESSED PRIOR TO UNDERTAKING STRIPPING.

STOCKPILE PROTECTION

SEDIMENT RETENTION STRUCTURES TO BE PLACED DOWNSLOPE OF ANY STOCKPILES. STOCKPILE IN PLACE > 28 DAYS TO BE TEMPORARILY GRASSED.

VEHICLE AND ROAD MANAGEMENT

SITE ACCESS TO BE RESTRICTED TO ALLOCATED TRUCK ROUTES. EXTERNAL ROADS TO BE SWEPT REGULARLY FOR DURATION OF WORKS.

STORMWATER DRAINAGE NOTES

1. STORMWATER DESIGN CRITERIA:
   AVERAGE RECURRENCE INTERVAL:
   5 YEAR ARI FOR CATCHMENTS <6Ha
   10 YEAR ARI FOR CATCHMENTS >6Ha
2. PIPES 300 DIA. AND LARGER TO BE REINFORCED CONCRETE CLASS '2' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O.
3. PIPES UP TO 300 DIA SHALL BE SEWER GRADE uPVC WITH SOLVENT WELDED JOINTS.
4. EQUIVALENT STRENGTH FRC PIPES MAY BE USED. SHOULD THE CONTRACTOR WISH TO USE FRC PIPES, THIS SHOULD BE CLEARLY INDICATED IN THEIR TENDER INCLUDING A PRICE DIFFERENCE TO RCP.
5. ALL STORMWATER DRAINAGE LINES UNDER PROPOSED BUILDING SLABS TO BE uPVC PRESSURE PIPE GRADE 6. ENSURE ALL VERTICALS AND DOWNPIPES ARE uPVC PRESSURE PIPE, GRADE 6 FOR A MIN OF 3.0m IN HEIGHT.
6. PIPES TO BE INSTALLED TO TYPE HS2 SUPPORT IN ACCORDANCE WITH AS 3725 (2007) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
7. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 (1998) AND AS/NZS 3500 3.2 (2000).
8. ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
9. WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC SEWER GRADE PIPE IS TO BE USED.
10. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
11. GRATES AND COVERS SHALL CONFORM TO AS 3996.
12. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
13. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.

EXISTING UNDERGROUND SERVICES NOTES

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION AND SERVICE AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.CARDNO CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY.
CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS. CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH, PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

TELSTRA - DUTY OF CARE NOTE

TELSTRA'S PLANS SHOW ONLY THE PRESENCE OF CABLES AND PLANT. THEY ONLY SHOW THEIR POSITION RELATIVE TO ROAD BOUNDARIES, PROPERTY FENCES ETC. AT THE TIME OF INSTALLATION AND TELSTRA DOES NOT WARRANT OR HOLD OUT THAT SUCH PLANS ARE ACCURATE THEREAFTER DUE TO CHANGES THAT MAY OCCUR OVER TIME. DO NOT ASSUME DEPTH OR ALIGNMENT OF CABLES OR PLANT AS THESE VARY SIGNIFICANTLY. THE CONTRACTOR HAS A DUTY OF CARE WHEN EXCAVATING NEAR TELSTRA CABLES AND PLANT.
BEFORE USING MACHINE EXCAVATORS TELSTRA PLANT MUST FIRST BE PHYSICALLY EXPOSED BY SOFT DIG POTHOLING TO IDENTIFY IT'S LOCATION TELSTRA WILL SEEK COMPENSATION FOR DAMAGES CAUSED TO IT'S PROPERTY AND LOSSES CAUSED TO TELSTRA AND IT'S CUSTOMERS.

EXISTING WORKS LEGEND

E	EXISTING POWERPOLES & OVERHEAD TRANSMISSION LINES
G	EXISTING GAS
W	EXISTING WATER
SSM No.	BENCHMARK

SURVEY NOTES

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY CRAIG & RHODES, BEING REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. CARDNO DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.
SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT CARDNO THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM THE ORIGINAL SURVEY DOCUMENTS.

LOCATION OF STRUCTURES APPROXIMATE ONLY.

THE LEVELS AND DETAILS ON THIS PLAN HAVE BEEN DETERMINED BY STADIA METHODS AND ARE WITHIN THE GENERAL ACCEPTED ACCURACIES FOR SUCH SURVEYS. ALL SET OUT LEVELS MUST BE REFERRED TO THE BENCH MARK. ORIGIN OF LEVELS: SSM 15716. R.L. 19.569 (A.H.D.) VIDE SCIMS DATED 20/06/2012.

BEARINGS AND DISTANCES ARE BY DEED ONLY AND ARE SUBJECT TO FINAL SURVEY. EXCEPT WHERE SHOWN BY DIMENSION, THE RELATIONSHIP OF IMPROVEMENTS TO BOUNDARIES IS DIAGRAMMATIC ONLY. THE TRUE POSITIONS ARE SUBJECT TO FINAL SURVEY.

TREE SIZES ARE ESTIMATES AND INDICATIVE ONLY.

SERVICES AND UTILITIES SHOWN HAVE BEEN LOCATED BY PHYSICAL EVIDENCE AND/OR BY REFERENCE TO SERVICE PLANS FROM THE RELEVANT AUTHORITIES. PITS MAY NOT HAVE BEEN OPENED TO VERIFY THE TYPE OF UTILITY. EXCAVATION HAS NOT BEEN CARRIED OUT TO CONFIRM UNDERGROUND LOCATION. SERVICE DETAILS SHOULD BE CONFIRMED WITH THE RELEVANT SERVICE AUTHORITY DURING DESIGN AND PRIOR TO COMMENCEMENT OF CONSTRUCTION.

AS PART OF YOUR DUTY OF CARE, PLEASE CONTACT THE FOLLOWING WHERE NECESSARY :-

AUSGRID	PH. 131535
DIAL BEFORE YOU DIG	PH. 1100
ENDEAVOUR ENERGY	PH. 131081
JEMENA GAS COMPANY	PH. 131245
NBN	PH. 1800 881 816
OPTUS COMMUNICATIONS	PH. 1800 505 777
SYDNEY WATER	PH. 132092
TELSTRA CORPORATION	PH. 132203

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ANY CONSTRUCTION ON OR NEAR THE BOUNDARIES WILL REQUIRE FURTHER SURVEY SO THAT MARKS DEFINING BOUNDARIES CAN BE PLACED.

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THESE NOTES MUST NOT BE ERASED.

PROPOSED WORKS LEGEND

PROPOSED

100.0	PROPOSED CONTOURS
100.0	EXISTING CONTOURS
	STOCKLAND BOUNDARY
1 / 4	BATTER SLOPE
	STAGE BOUNDARY
CAUTION DANGER	CRITICAL SAFETY ITEM
	TREES TO BE REMOVED AS PART OF BULK EARTHWORKS PACKAGE.
	TREES TO BE RETAINED
	BATTERS
1001	LOT NUMBERS
K&G	KERB & GUTTER REFER BLACKTOWN CITY COUNCIL STANDARD DETAIL.
LBK	LAYBACK KERB REFER DRAWING 1341 FOR DETAIL.
ES	ELSHOLZ KERB REFER DRAWING 1341 FOR DETAIL.
KO	KERB ONLY REFER BLACKTOWN CITY COUNCIL STANDARD DETAIL.
FK	FLUSH KERB REFER DRAWING 1341 FOR DETAIL.
DD	DISH DRAIN REFER BLACKTOWN CITY COUNCIL STANDARD DETAIL.
MK	INTEGRAL MODIFIED MOUNTABLE KERB REFER DRAWING 1341 FOR DETAIL.
MDK	MEDIAN KERB REFER BLACKTOWN CITY COUNCIL STANDARD DETAIL.
VC	VEHICULAR CROSSING REFER BLACKTOWN CITY COUNCIL STANDARD DETAIL.
PR	PRAM RAMP REFER BLACKTOWN CITY COUNCIL FOR DETAIL.
G (OPTIONAL)	INDICATIVE GARAGE/DRIVEWAY LOCATION ONLY
	CONCRETE HEADWALL
4\2	DRAINAGE LINE No. DRAINAGE PIT No.
Ø675	STORMWATER PIPELINE
	DRAINAGE CAP
	STORMWATER DRAINAGE PITS
	RETAINING WALL
	SCOUR PROTECTION
	3.0m WIDE TURF & LEVEL SPREADER

PROPOSED WORKS LEGEND CONTINUED

SS	SUBSOIL DRAINAGE LINE TO BLACKTOWN CITY COUNCIL STANDARD DETAIL. FLUSHING POINTS NOT SHOWN ON PLANS FOR CLARITY. PROVIDE FLUSHING POINTS AT END OF LINE AND 50m SPACINGS WHERE REQUIRED.
	TEMPORARY DRAINAGE CHANNEL.
	BIO-RETENTION PLANTING TO LANDSCAPE ARCHITECTS DETAILS.
	PROPOSED ELECTRICAL SUBSTATION AND EASEMENT.
FDH	FIBRE DISTRIBUTION HUB
	HD PVC CONDUITS

PROPOSED EASEMENTS

(A) - PROPOSED RIGHT OF CARRIAGEWAY 20.8 WIDE & VARIABLE
(B) - PROPOSED EASEMENT FOR UNDERGROUND CABLES 1 WIDE
(C) - PROPOSED EASEMENT FOR PADMOUNT SUBSTATION 2.75 WIDE
(D) - PROPOSED RESTRICTION ON USE OF LAND
(E) - PROPOSED RESTRICTION ON USE OF LAND
(F) - PROPOSED EASEMENT FOR ACCESS & MAINTENANCE 0.9 WIDE
(G) - PROPOSED EASEMENT TO DRAIN WATER 1.5 WIDE
(H) - PROPOSED EASEMENT FOR UNDERGROUND CABLES 8 WIDE
(J) - PROPOSED EASEMENT FOR RETAINING WALL 1 WIDE

ROOF WATER KERB OUTLETS

1. KERB OUTLETS TO BE PROVIDED IN ACCORDANCE WITH BLACKTOWN CITY COUNCILS CIVIL WORKS SPECIFICATION AT EACH LOT WHERE INTERALLOTMENT DRAINAGE IS NOT PROVIDED
2. KERB OUTLETS ARE TO BE CONSTRUCTED AT THE SAME TIME KERBS ARE POURED.

Rev	Date	Description	Drawn	Appr.
6	2/12/2013	BULK EARTHWORKS NOTE AMENDED	BML	DAC
5	28/10/2013	ISSUED FOR TENDER	BML	CEV
4	23/10/2013	ISSUED FOR APPROVAL	BML	CEV
3	16/10/2013	ISSUED FOR TENDER REVIEW	BML	CEV
2	1/10/2013	ISSUED TO CLIENT FOR REVIEW	BML	SH
1	18/09/2013	DRAFT - ISSUE FOR COORDINATION ONLY	BML	

Stockland

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Cardno
Shaping the Future
ABN: 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards NSW Australia 2065
Phone (+61 2) 9496 7700 Fax (+61 2) 9439 5170
Email: Sydney@cardno.com.au Web: www.cardno.com.au

Drawn	BML	Date	18/09/2013
Checked	DC	Date	18/09/2013
Designed	SHH	Date	18/09/2013
Verified	CEV	Date	18/09/2013
Approved	SH	Date	18/09/2013

Client: STOCKLAND

MARSDEN PARK
STAGE 1-4 & 11
TENDER

GENERAL NOTES & LEGENDS

Status: FOR TENDER ONLY

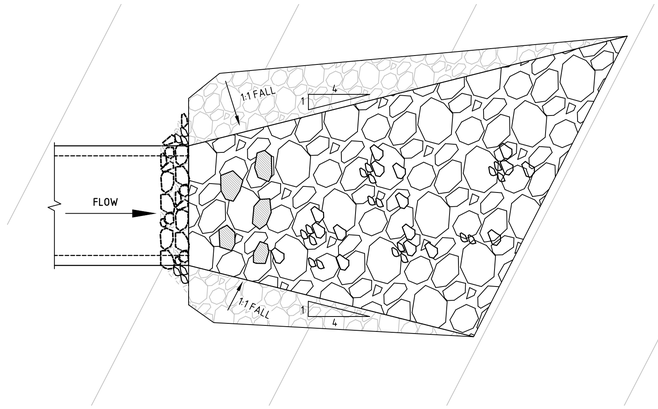
Date	Datum	Scale	Size
18/09/2013	AHD	N.T.S	A1

Drawing Number: CardnoUT-CV-ST01-1002
Revision: 6

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150mm ON A1 ORIGINAL

XREFs: X-GRP-A1-SHT; X-SYD-A1-Logo
CAD FILE: N:\Urban\6000 - 6099\60034\0 - Marsden Park\5. DRAWINGS\1. Build\02 Civil DA\01 Stage 01\Drawings\CardnoUT-CV-ST01-1002-DWG(6).dwg

DATE PLOTTED: 3 February 2014 3:19 PM BY : BRENDAN LARKIN (SYDNEY)

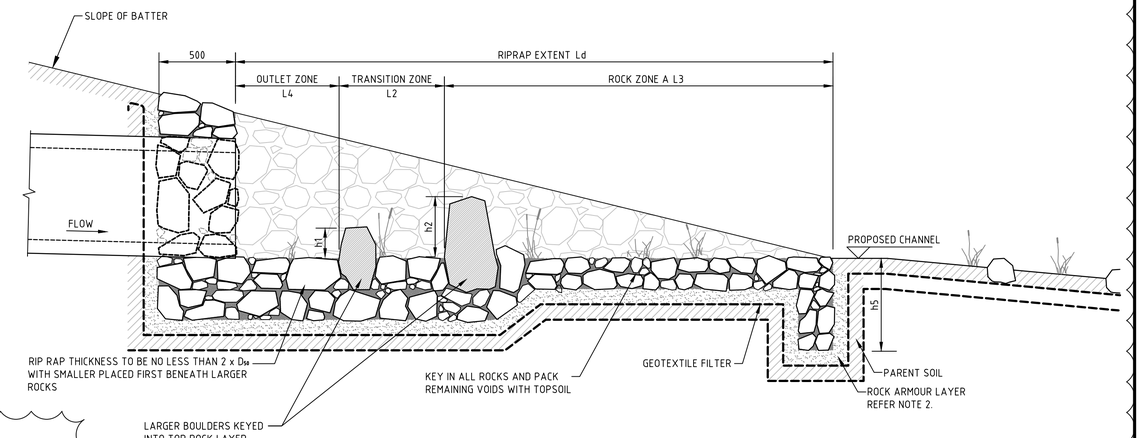


TYPICAL STACKED ROCK HEADWALL PLAN (ANGLED)

NTS

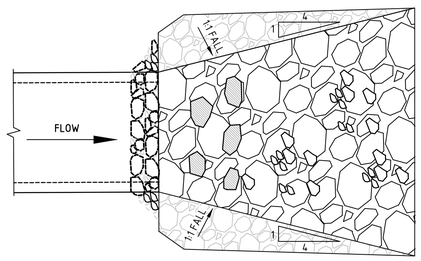
OUTLET (MINIMUM DIMENSIONS)				
	D01/01	E01/01	F01/01	G09/01
V_0 (m)	2.19	2.02	2.34	1.88
D (m)	0.68	0.60	0.75	1.8 x 1.2
L_2 (m)	1.50	1.30	1.70	3.50
L_3 (m)	2.20	1.90	2.50	5.8
L_d (m)	3.70	3.20	4.20	9.3
h_1 (m)	0.21	0.19	0.23	0.50
h_2 (m)	0.42	0.38	0.47	1.0
D_{50} (mm)	300	300	300	300

7



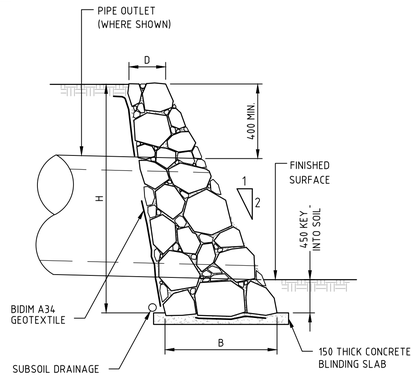
TYPICAL HEADWALL SECTION AND RIPRAP DETAIL (WITH ENERGY DISSIPATOR)

SCALE 1:20



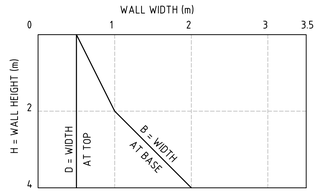
TYPICAL STACKED ROCK HEADWALL PLAN (STRAIGHT)

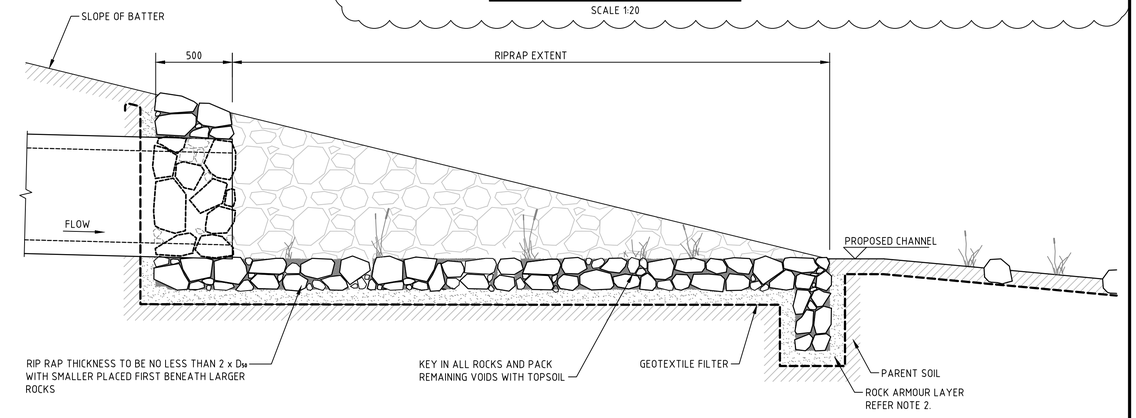
NTS



ROCK STACKED HEADWALL OVER 0.5m

SCALE 1:20





TYPICAL HEADWALL SECTION AND RIPRAP DETAIL (NO ENERGY DISSIPATOR)

SCALE 1:20

7

HEADWALL NUMBER	RIPRAP			LOCATION
	TYPE	EXTENT (m)	ROCK SIZE (D50) m	
BASIN 01/01	NO ENERGY DISSIPATOR	5	0.3	OUTLET
BASIN 03/01	NO ENERGY DISSIPATOR	5	0.3	OUTLET
4x1200x600RCBC	NO ENERGY DISSIPATOR	12	0.3	OUTLET
4x1200x600RCBC	NO ENERGY DISSIPATOR	5	0.2	INLET

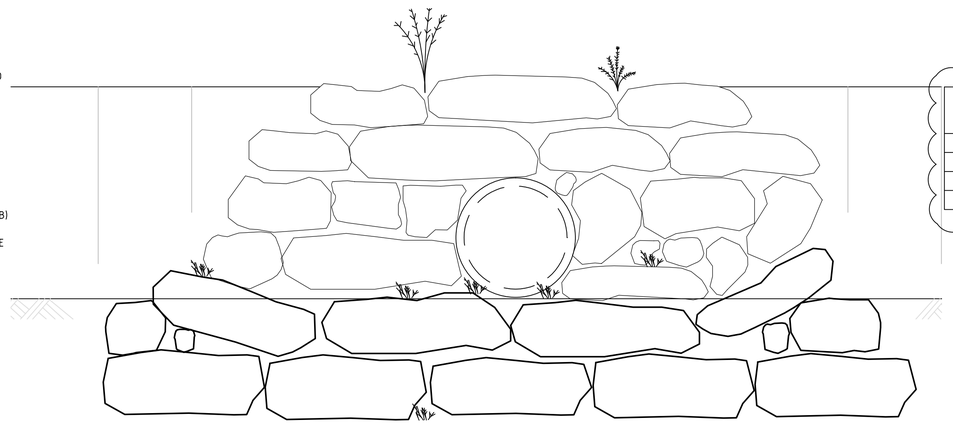
NOTES:

STACKED ROCK HEADWALLS

1. BACKFILL IS TO BE GRANULAR, FREE DRAINING AND COMPACTED TO 95% MAXIMUM DRY DENSITY.
2. FOUNDATION TO BE APPROVED FOR 200kPa BEARING CAPACITY.
3. ROCK IS TO BE SOUND, DURABLE BASSALT OR OTHER MATERIAL APPROVED BY COUNCIL ENGINEER.
4. ROCKS SHALL BE PLACED IN SUCH A MANNER THAT THEY ARE STABLE AND INTERLOCKING AND LAID ROUGHLY COURSED AND BEDDED ON THEIR BROADEST BASE.
5. EACH ROCK SHALL BE:
   - 5.1. ELONGATED TO ALLOW STACKING ON THE LONGEST AXIS.
   - 5.2. ANGULAR IN SHAPE (PROMOTES INTERLOCKING)
   - 5.3. FREE FROM OVERBURDEN, SPOIL, SHALE AND ORGANIC MATERIAL.
6. WALL CONSTRUCTION TO BE SUPERVISED BY A SUITABLY QUALIFIED PERSON.
7. AIR VOIDS SHALL NOT EXCEED 30% VOLUME.
8. THE TOP COURSE OF ROCKS ON EMBANKMENT AND ADJACENT TO PIPE SHALL BE MORTARED INTO POSITION.
9. WHERE THE SURFACE SLOPE OF RETAINED MATERIALS BETWEEN 10:1 AND 4:1 THE BASE DIMENSION (B) IS TO BE INCREASED BY 0.5m.
10. A CONTINUOUS 100mm Φ SUBSOIL DRAIN IS TO BE INSTALLED AT THE REAR OF THE WALL WHERE THE WALL HEIGHT (H) EXCEEDS 3m OR WHERE THE WALL FOUNDATION CONSISTS OF MATERIAL OTHER THAN ROCK.

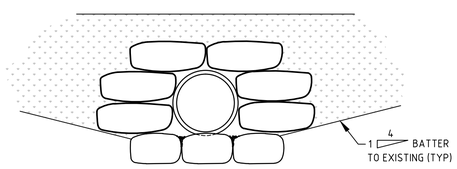
ROCK RIPRAP

1. ALL RIPRAP MUST CONSIST OF ANGULAR RUN-OF-QUARRY DURABLE ROCK PLACED OVER A 200MM LAYER OF ANGULAR COBBLES D50=100MM MIXED WITH GRAVEL D50=10MM.
2. ALL ROCK IS TO BE A HARD, DURABLE ROCK WITH A POINT INDEX LOAD IS50 GREATER THAN 1.0MPA AS DETERMINED IN ACCORDANCE WITH AS4133.4.1-2007.
3. RIPRAP IS TO BE PLACED BY HAND AND CROW-BARERED INTO PLACE TO ENSURE FIT WITH MINIMUM VOIDS.
4. ALL ROCK AND COBBLES TO BE PLACED WITH TOPSOIL. GAPS IN RIPRAP TO BE PLANTED AS SPECIFIED IN LANDSCAPING PLANS
   - 4.1. M50 - 60KG (NDW 300MD)
   - 4.2. M15 - 25KG
   - 4.3. 100 - 120KG



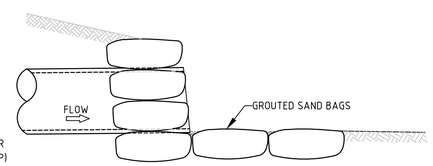
TYPICAL HEADWALL ELEVATION

NTS



TEMPORARY SANDBAG HEADWALL

SCALE 1:20



TEMPORARY SANDBAG HEADWALL SECTION

SCALE 1:20

HEADWALL NOTES:

1. ALL STONE TO BE HAND PLACED.
2. KEY IN ALL ROCK AND PACK REMAINING VOIDS WITH TOPSOIL.
3. COMPACT SUBGRADE TO ACHIEVE A SUITABLE FOUNDATION FOR ROCK ARMOUR (MIN. 90% STD)

ROCK ARMOUR NOTES:

1. 200mm THICK ROCK ARMOUR LAYER. Dmax=130mm AND D_{85}=50mm NOT MORE THAN 15% BY MASS OF THE TOTAL MATERIAL IS TO BE FINER THAN A NOMINAL DIAMETER OF 25mm.

0 500 1000 1500 2000mm

SCALE 1:20

Rev	Date	Description	Drawn	Appr.
7	3/02/2014	UPDATED OUTLET DETAILS	BML	CEV
6	5/12/2013	DETAIL AMENDED & TABLE ADDED	BML	DAC
5	28/10/2013	ISSUED FOR TENDER	BML	CEV
4	23/10/2013	ISSUED FOR APPROVAL	BML	CEV
3	16/10/2013	ISSUED FOR TENDER REVIEW	BML	CEV
2	1/10/2013	ISSUED TO CLIENT FOR REVIEW	BML	SH
1	18/09/2013	DRAFT - ISSUE FOR COORDINATION ONLY	BML	

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Cardno
Shaping the Future
ABN: 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards NSW Australia 2065
Phone (+61 2) 9496 7700 Fax (+61 2) 9439 5170
Email: Sydney@cardno.com.au Web: www.cardno.com.au

Drawn BML	Date 18/09/2013	
Checked DC	Date 18/09/2013	
Designed SHH	Date 18/09/2013	
Verified CEV	Date 18/09/2013	
Approved SH	Date 18/09/2013	

Client STOCKLAND

MARSDEN PARK
STAGE 1-4 & 11
TENDER

STORMWATER BASIN DETAILS
SHEET 1

Status: FOR TENDER ONLY

Date	Datum	Scale	Size
18/09/2013	AHD	AS SHOWN	A1

Drawing Number: CardnoUT-CV-ST01-1431 Revision: 7

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150mm ON A1 ORIGINAL

XREF's: X-GRP-A1-SHT; X-SYD-A1-logo
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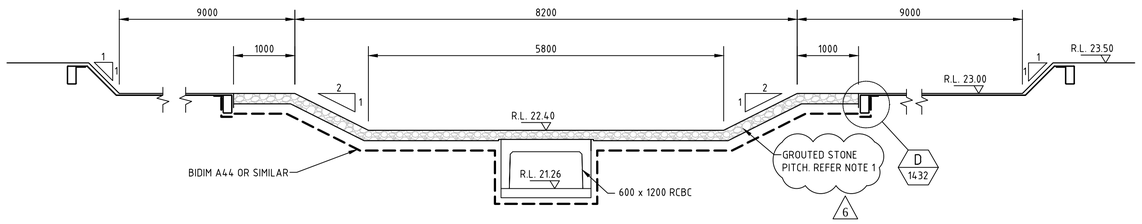
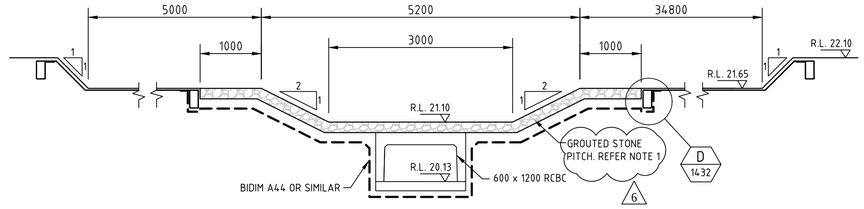
DATE PLOTTED: 3 February 2014 2:01 PM BY : DAVID COLEMAN (SYDNEY)



UPPER BASIN OUTLET SECTION

SCALE 1:50



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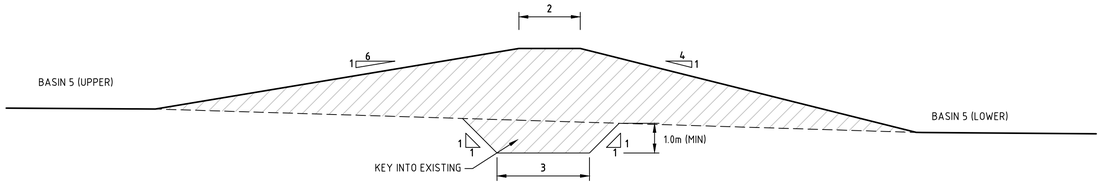

SECTION 1

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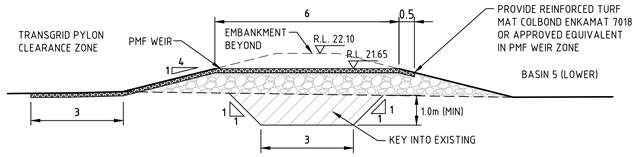

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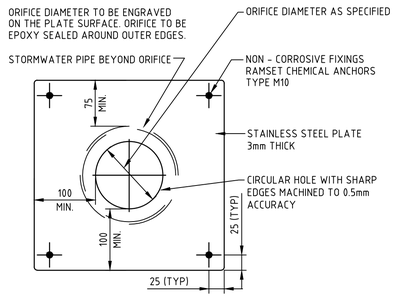
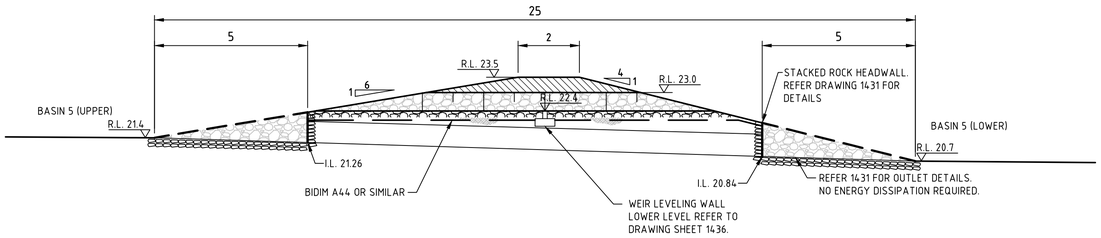


ORIFICE PLATE DETAIL

SCALE 1:5



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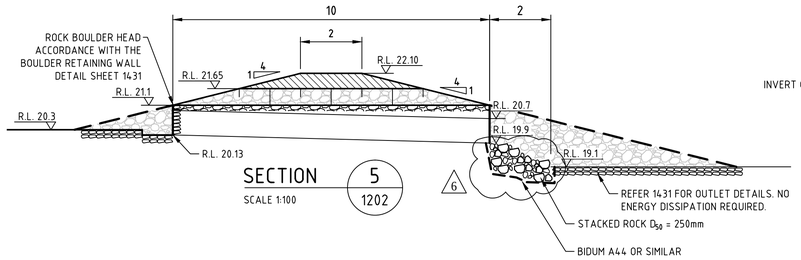

SECTION 5

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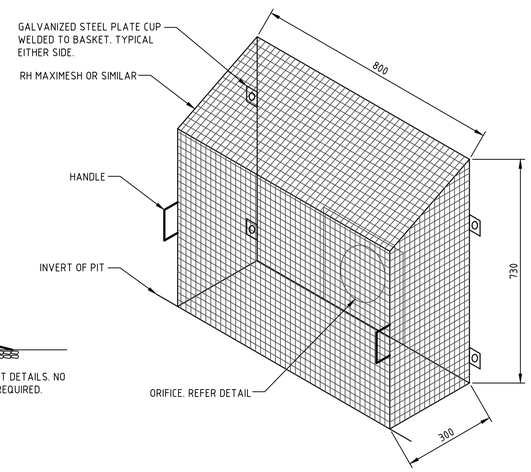
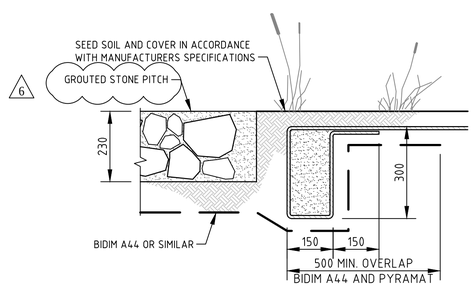


TRASH SCREEN DETAIL

SCALE 1:10

NOTE:
TRASH SCREEN DIMENSION TO BE ADJUSTED TO PROVIDE 150mm MIN CLEAR SPACE AROUND ORIFICE PLATE.



DETAIL 'D'

SCALE 1:10

NOTES:

BIORETENTION BASIN WEIR NOTES:

1. GROUTED STONE PITCHING - STONES 75-100mm, 300mm THICK ON 2.5mm HDPE LINER. BUND SUBSOIL COMPACTION TO BE IN ACCORDANCE WITH GEOENVIRO SALINITY AND GEOTECHNICAL ASSESSMENT REFER LANDSCAPE DRAWINGS FOR PLANTING DETAILS.

6

0 2000 4000 6000 8000 10000mm
SCALE 1:100

0 1000 2000 3000 4000 5000mm
SCALE 1:50

Rev	Date	Description	Drawn	Appr.
6	30/01/2014	DETAILS REVISED	BML	CEV
5	28/10/2013	ISSUED FOR TENDER	BML	CEV
4	23/10/2013	ISSUED FOR APPROVAL	BML	CEV
3	16/10/2013	ISSUED FOR TENDER REVIEW	BML	CEV
2	1/10/2013	ISSUED TO CLIENT FOR REVIEW	BML	SH
1	18/09/2013	DRAFT - ISSUE FOR COORDINATION ONLY	BML	

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Cardno
Shaping the Future
ABN: 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards NSW Australia 2065
Phone (+61 2) 9496 7700 Fax (+61 2) 9439 5170
Email: Sydney@cardno.com.au Web: www.cardno.com.au

Drawn: BML	Date: 18/09/2013	
Checked: DC	Date: 18/09/2013	
Designed: SHH	Date: 18/09/2013	
Verified: CEV	Date: 18/09/2013	
Approved: SH	Date: 18/09/2013	

Client: STOCKLAND

MARSDEN PARK
STAGE 1-4 & 11
TENDER

STORMWATER BASIN DETAILS
SHEET 2

Status: FOR TENDER ONLY

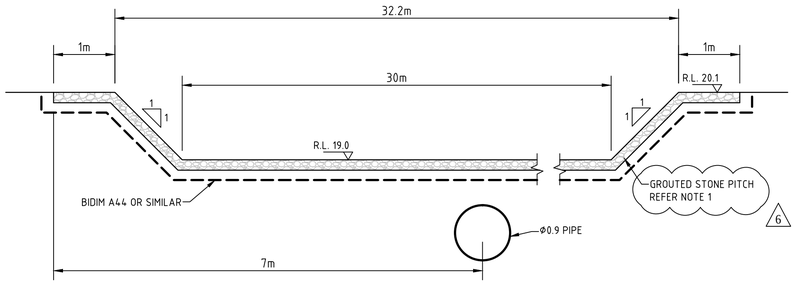
Date	Datum	Scale	Size
18/09/2013	AHD	AS SHOWN	A1

Drawing Number: CardnoUT-CV-ST01-1432
Revision: 6

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150mm ON A1 ORIGINAL

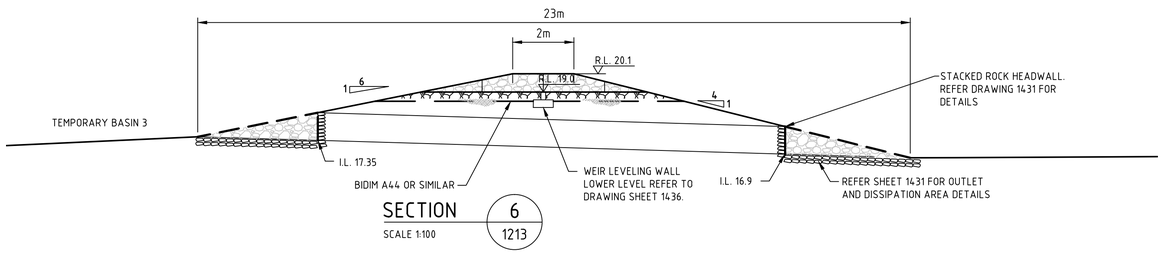
XREFs: X-GRP-A1-SHT; X-SYD-A1-Logo
CAD FILE: N:\Urban\6000 - 6999\60340 - Marsden Park\5. DRAWINGS\1. Build\02 Civil DA\01 Stage 01\Drawings\CardnoUT-CV-ST01-1432-DWG(6).dwg

DATE PLOTTED: 3 February 2014 2:02 PM BY : DAVID COLEMAN (SYDNEY)



BASIN 3 OUTLET SECTION

SCALE 1:50



SECTION 6 / 1213

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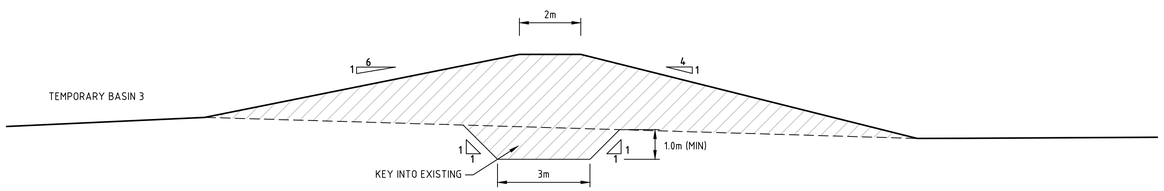

SECTION 7 / 1213

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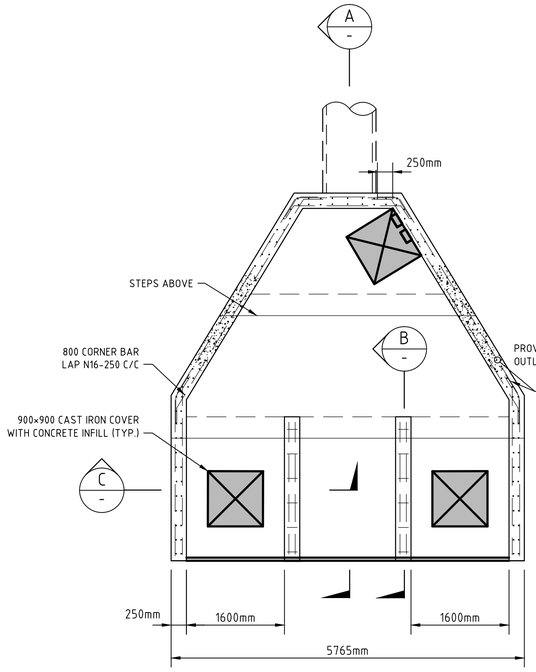
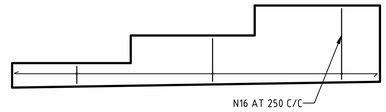


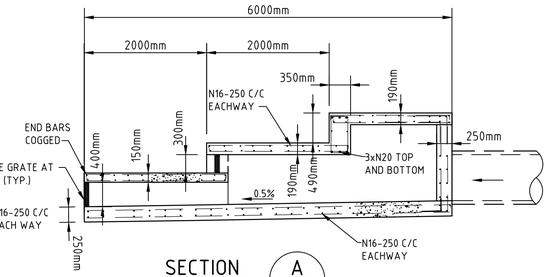
A01/01 OUTLET THROUGH STEPPED STRUCTURE

SCALE 1:50



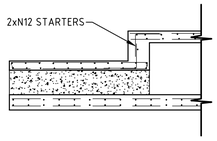
ELAVATION

SCALE 1:20



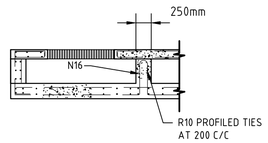
SECTION A / -

SCALE 1:50



SECTION B / -

SCALE 1:50



SECTION C / -

SCALE 1:50

LANDSCAPE FINISHES SCHEDULE – CONCRETE WORKS

Project: Marsden Park
Basin 5 Landscape Works

Date: 24th October 2013
Issue: 'A' For Tender

Notes

1. All finishes and colours are subject to approval by JMD Design prior to manufacture or site applications
2. This Schedule shall be read in conjunction with the landscape drawings, Council and Engineers specification and details. Refer any discrepancies to JMD Design for determination prior to proceeding with the ordering of materials or proceeding with the affected works on site.
3. All work to be carried out according to the applicable Australian Standards, building codes, authority and council requirements.

ITEM	DESCRIPTION	FINISH / COLOUR	REMARKS	Sample
Concrete In situ Walls	All walls & steps	Flatness Tolerance Class – A Colour: Grey cement Aggregate Type: 10mm river gravel Primary Finish: Class 2, off form Top Of Wall: steel trowel Secondary Finish: Light Grit Blast to all visible surfaces Chamfer: 10mm chamfer to all vertical and horizontal corners	HOLD POINTS: - Formwork in place prior to pour. - Formwork striped No ties bars in walls less than 900mm high. New formwork required for all visible surfaces. Patching will not be accepted.	Aggregate sample & 2m length of wall
Concrete Pedestrian Pavements	All general pedestrian pavements	Flatness Tolerance Class – A Colour: Grey cement Aggregate Type: 20mm Primary Finish: Steel trowel with pencil round tooled edges Secondary Finish: Light broom at right angles to direction of travel, edge to edge, **no visible tooled border.**	HOLD POINTS: - Pavement finishes sample	2m length of path width
Concrete Vehicular Pavements	All vehicular concrete pavement areas. Concrete is to be coloured to delineate vehicular areas.	Flatness Tolerance Class – A Colour: Grey cement with Concrete Colour Systems pigment colour 'Mud Pack' Aggregate Type: 20mm Primary Finish: Steel trowel with pencil round tooled edges Secondary Finish: Light broom at right angles to direction of travel, edge to edge, no border.	HOLD POINTS: - Pavement finishes sample	2m length of path width

0 2000 4000 6000 8000 10000mm

SCALE 1:100

0 1000 2000 3000 4000 5000mm

SCALE 1:50

NOTES:

BIORETENTION BASIN WEIR NOTES:

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Cardno
Shaping the Future
ABN: 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards NSW Australia 2065
Phone (+61 2) 9496 7700 Fax (+61 2) 9439 5170
Email: Sydney@cardno.com.au Web: www.cardno.com.au

Drawn	BML	Date	18/09/2013
Checked	DC	Date	18/09/2013
Designed	SHH	Date	18/09/2013
Verified	CEV	Date	18/09/2013
Approved	SH	Date	18/09/2013

Client: STOCKLAND

MARSDEN PARK
STAGE 1-4 & 11
TENDER

STORMWATER BASIN DETAILS
SHEET 3

Status: FOR TENDER ONLY

Date	Datum	Scale	Size
18/09/2013	AHD	AS SHOWN	A1

Drawing Number: CardnoUT-CV-ST01-1433
Revision: 6

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XREFs: X-GRP-A1-SHT; X-SYD-A1-Logo
CAD FILE: N:\Urban\6000 - 6099\60034\ - Marsden Park\5. DRAWINGS\1. Build\02 Civil DA\01 Stage 01\Drawings\CardnoUT-CV-ST01-1433-DWG(6).dwg

MAINTENANCE REQUIREMENTS FOR BIO-RETENTION SYSTEMS

INSPECTION TASK	FREQUENCY	COMMENT	MAINTENANCE ACTION
FILTER MEDIA			
CHECK FOR SEDIMENT DEPOSITION	3 MONTHLY, AFTER RAIN	BLOCKING OF INLETS AND FILTER MEDIA REDUCES TREATMENT CAPACITY	-REMOVE SEDIMENT AND LITTER FROM INLETS, FOREBAYS AND OTHER PRE-TREATMENT MEASURES, AND THE SURFACE OF BIO-RETENTION STREET TREES
CHECK FOR HOLES, EROSION OR SCOUR	3 MONTHLY, AFTER RAIN	HOLES, EROSION AND SCOUR CAN BE A SIGN OF EXCESSIVE INFLOW VELOCITIES DUE TO POOR INFLOW CONTROL OR INADEQUATE PROVISION FOR BYPASS OF HIGH FLOWS	-INFILL HOLES, REPAIR EROSION AND SCOUR -PROVIDE/AUGMENT ENERGY DISSIPATION (E.G. ROCKS AND PEBBLES AT INLET) -RECONFIGURE INLET TO BYPASS HIGH FLOWS -RELOCATE INLET
INSPECT FOR THE BUILD UP OF OILY OR CLAYEY SEDIMENT ON THE SURFACE OF THE FILTER MEDIA	3 MONTHLY, AFTER RAIN	REDUCED SURFACE POROSITY REDUCES TREATMENT CAPACITY	-CLEAR AWAY ANY SEDIMENT ON THE SURFACE AND LIGHTLY RAKE OVER THE SURFACE OF THE FILTER MEDIA BETWEEN PLANTS
CHECK FOR LITTER IN AND AROUND TREATMENT AREAS	3 MONTHLY, AFTER RAIN	FLOW PATHS AND INFILTRATION THROUGH THE FILTER MEDIA MAY BE HINDERED	-REMOVE BOTH ORGANIC AND ANTHROPOGENIC LITTER
HORTICULTURAL			
ASSESS PLANTS FOR DISEASE OR PEST INFECTION	3 MONTHLY, OR AS DESIRED FOR AESTHETICS		-TREAT OR REPLACE AS NECESSARY
CHECK PLANTS FOR SIGNS OF STUNTED GROWTH OR DIE OFF	3 MONTHLY, OR AS DESIRED FOR AESTHETICS	POOR PLANT HEALTH CAN BE A SIGN OF TOO MUCH OR TOO LITTLE WATER, OR POOR FLOW CONTROL	-CHECK INLET AND OVERFLOW LEVELS ARE CORRECT AND RESET AS REQUIRED FOR TOO MUCH WATER: -REPLACE PLANTS WITH SPECIES MORE TOLERANT OF WET CONDITIONS OR -REPLACE FILTER MEDIA WITH THAT OF A HIGHER INFILTRATION CAPACITY FOR TOO LITTLE WATER: -CONSIDER INSTALLING A CHOKE ON THE OUTLET OR -REPLANT WITH SPECIES MORE TOLERANT OF DRY CONDITIONS
CHECK THAT ORIGINAL PLANT DENSITIES ARE MAINTAINED	3 MONTHLY, OR AS DESIRED FOR AESTHETICS	PLANTS ARE ESSENTIAL FOR POLLUTANT REMOVAL AND MAINTAINING DRAINAGE CAPACITY. PLANTS SHOULD BE CLOSE ENOUGH THAT THEIR ROOTS TOUCH EACH OTHER; 6-10 PLANTS/m^2 IS GENERALLY ADEQUATE. A HIGH PLANT DENSITY ALSO HELPS PREVENT INGRESS OF WEEDS	-CARRY OUT INFILL PLANTING AS REQUIRED - PLANTS SHOULD BE EVENLY SPACED TO HELP PREVENT SCOURING DUE TO CONCENTRATION OF FLOW
CHECK FOR PRESENCE OF WEEDS	3 MONTHLY, OR AS DESIRED FOR AESTHETICS	WEEDS CAN REDUCE AESTHETICS AND TREATMENT CAPACITY BECAUSE SOME PLANTS ARE MORE EFFECTIVE AT POLLUTANT REMOVAL THAN OTHERS	-MANUALLY REMOVE WEEDS WHERE POSSIBLE - WHERE THIS IS NOT FEASIBLE, SPOT SPRAY WEEDS WITH A HERBICIDE APPROPRIATE FOR USE NEAR WATERWAYS
DRAINAGE			
CHECK THAT UNDERDRAIN IS NOT BLOCKED WITH SEDIMENT OR ROOTS	6 MONTHLY, AFTER RAIN	FILTER MEDIA AND PLANTS CAN BECOME WATERLOGGED OF THE UNDERDRAIN IS CHOKED OR BLOCKED. REMOTE CAMERA (CCTV) INSPECTION OF PIPELINES COULD BE USEFUL	-CLEAR UNDERDRAIN AS REQUIRED USING A PIPE SNAKE OR WATER JET -WATER JETS SHOULD BE USED WITH CARE IN PERFORATED PIPES
CHECK THAT INFLOW AREAS, WEIRS AND GRATES OVER PITS ARE CLEAR OF LITTER AND DEBRIS AND IN GOOD AND SAFE CONDITION	MONTHLY, AND OCCASIONALLY AFTER RAIN	A BLOCKED GRATE OR INLET WOULD CAUSE NUISANCE FLOODING	-REPLACE DISLODGED OR DAMAGED PIT COVERS AS REQUIRED -REMOVE SEDIMENT AND LITTER FROM PITS AND ENTRY SITES (LIKELY TO BE AN IRREGULAR OCCURRENCE IN MATURE CATCHMENTS)
OTHER			
OBSERVE BIO-RETENTION SYSTEM AFTER A RAINFALL EVENT TO CHECK DRAINAGE	TWICE A YEAR, AFTER RAIN	PONDING ON THE FILTER MEDIA SURFACE FOR MORE THAN A FEW HOURS AFTER RAIN IS A SIGN OF POOR DRAINAGE	-CHECK CATCHMENT LAND USE AND ASSESS WHETHER IT HAS ALTERED FROM DESIGN CAPACITY (E.G. UNUSUALLY HIGH SEDIMENT LOADS MAY REQUIRE INSTALLATION OF A SEDIMENT FOREBAY

BIO-RETENTION FILTER MEDIA SPECIFICATION

MATERIALS:

BIO-RETENTION FILTER MEDIA, TRANSITION LAYER AND DRAINAGE LAYERS TO BE IN
ACCORDANCE WITH CURRENT VERSION OF FAWB DOCUMENT
"STORMWATER BIO-FILTRATION SYSTEMS ADOPTION GUIDELINES" AND THE FOLLOWING,:

A) BIO-RETENTION FILTER MEDIA

1. BIO-RETENTION MEDIA IS TO BE FREE OF RUBBISH AND DELETERIOUS MATERIAL.
2. BIO-RETENTION FILTER MEDIA SATURATED HYDRAULIC CONDUCTIVITY TO BE A MINIMUM 250mm/hr AND A MAXIMUM OF 400mm/hr USING TEST METHOD ASTM F1815-06.
3. IT IS DESIRABLE THAT THE BIO-RETENTION FILTER MEDIA PARTICLE SIZE DISTRIBUTION IS AS FOLLOWS:

CLAY & SILT	<3%	(<0.05mm)
VERY FINE SAND	5-30%	(0.05-0.15mm)
FINE SAND	10-30%	(0.15-0.25mm)
MEDIUM TO COARSE SAND	40-60%	(0.25-1.0mm)
COARSE SAND	7-10%	(1.0-2.0mm)
FIN GRAVEL	<3%	(2.0-3.4mm)

THE COMBINED PERCENTAGE OF CLAY AND SILT MUST NOT EXCEED 3% (W/W) UNDER ANY CIRCUMSTANCES.

4. BIO-RETENTION FILTER MEDIA IS TO BE TESTED AND COMPLY WITH THE FOLLOWING
REQUIREMENTS:
   a) ORGANIC MATTER CONTENT IN ACCORDANCE WITH AS 4419 AT LEAST 3% (W/W)
   b) TOTAL NITROGEN (TN) CONTENT <800mg/kg
   c) ORTHOPHOSPHATE (PO_4^3) CONTENT - <40mg/kg WHERE PLANTS WITH MODERATE
   PHOSPHOROUS SENSITIVITY ARE TO BE USED, TOTAL PHOSPHOROUS CONCENTRATION
   SHOULD BE <20mg/kg.
   d) AS SPECIFIED FOR "NATURAL SOILS AND SOIL BLENDS" AS4419 - pH 5.5-7.5
   (pH 1.5 IN WATER)
   e) ELECTRICAL CONDUCTIVITY (EC) AS SPECIFIED FOR "NATURAL SOILS AND
   SOILS BLENDS" AS4419 <1.2ds/m
   f) DISPENSABILITY - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' AS4419
   CATEGORY 1 OR 2
   g) TEXTURE - LOAMY SAND AS PER AS4419

5. PRIOR TO PLACEMENT OF THE FILTER MEDIA A STATEMENT IS TO BE SUBMITTED FROM A QUALIFIED HORTICULTURIST CONFIRMING THAT THE SOIL IS CAPABLE OF SUPPORTING A HEALTHY VEGETABLE COMMUNITY.

6. TESTS CONFIRMING THE REQUIREMENTS OF ITEMS 1 TO 4 ARE TO BE SUBMITTED FOR APPROVAL PRIOR TO PLACEMENT OF FILTER MEDIA.

7. PRIOR TO PLANTING, THE TOP 100mm OF THE BIORETENTION FILTER MEDIUM IS TO BE AMELIORATED WITH APPROPRIATE ORGANIC MATTER, FERTILISER AND TRACE ELEMENTS TO AID PLANT ESTABLISHMENT AS PER THE TABLE BELOW.
TABLE: RECIPE FOR AMELIORATING THE TOP 100mm OF BIORETENTION FILTER MEDIA.

CONSTITUENT	QUANTITY (kg/100m^2 OF FILTER AREA)
GRANULATED POULTRY MANURE FINES	50
SUPERPHOSPHATE	2
MAGNESIUM SULPHATE	3
POTASSIUM SULPHATE	2
TRACE ELEMENT MIX	1
FERTILIZER NPK (16.4.14)	4
LIME	20

B) TRANSITION LAYER

1) TRANSITION LAYER MATERIAL SHALL BE A CLEAN, WELL GRADED SAND MATERIAL CONTAINING <2% FINES.
2) THE PARTICLE SIZE DISTRIBUTION OF THE SAND TO BE ASSESSED TO ENSURE.
D_{15} (TRANSITION LAYER) LESS THAN OR EQUAL TO 5 x D_{85} (FILTER MEDIA)

WHERE: D_{15} (TRANSITION LAYER) IS THE 15TH PERCENTILE PARTICLE SIZE IN THE TRANSITION LAYER MATERIAL (i.e, 15% OF THE SAND IS SMALLER THAN D_{15} mm), AND D_{85} (FILTER MEDIA) IS THE 85TH PERCENTILE PARTICLE SIZE IN THE FILTER MEDIA.

C) DRAINAGE LAYER A

DRAINAGE LAYER MATERIAL IS TO BE CLEAN, FINE GRAVEL, SUCH AS A 2 - 5mm WASHED SCREENING. THE PARTICLE SIZE DISTRIBUTION TO BE:
D_{15} (DRAINAGE LAYER) < 5 x D_{85} (TRANSITION LAYER)
WHERE: D_{15} (DRAINAGE LAYER) IS THE 15TH PERCENTILE PARTICLE SIZE IN THE TRANSITION LAYER MATERIAL (i.e, 15% OF THE SAND IS SMALLER THAN D_{15} mm), AND D_{85} (TRANSITION LAYER) IS THE 85TH PERCENTILE PARTICLE SIZE IN THE FILTER MEDIA.

INSTALLATION:

FILTER MATERIAL IS TO BE LIGHTLY COMPACTED EG. A SINGLE PASS WITH A DRUM LAWN ROLLER. UNDER NO CIRCUMSTANCES SHOULD HEAVY EQUIPMENT OR MULTIPLE PASSES BE MADE. FILTER MEDIA SHOULD BE INSTALLED IN TWO LIFTS UNLESS THE DEPTH IS LESS THAN 500mm.

LINER

HDPE LINER TO BE IMPERMEABLE.

6

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Stockland

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ABN: 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
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Email: Sydney@cardno.com.au Web: www.cardno.com.au

Drawn BML	Date 18/09/2013	Client STOCKLAND	
Checked DC	Date 18/09/2013	MARSDEN PARK STAGE 1-4 & 11 TENDER	Status FOR TENDER ONLY
Designed SHH	Date 18/09/2013		Date 18/09/2013 · Datum AHD · Scale AS SHOWN · Size A1
Verified CEV	Date 18/09/2013	STORMWATER BIO FILTRATION TYPICAL DETAILS - SHEET 1	Drawing Number CardnoUT-CV-ST01-1435 · Revision 6
Approved SH	Date 18/09/2013		

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150mm ON A1 ORIGINAL

DATE PLOTTED: 3 February 2014 2:02 PM BY : DAVID COLEMAN (SYDNEY)
XREF's: X-GRP-A1-SHT1; X-SYD-A1-Logo; X-DA1-1-Design
CAD FILE: N:\Urban\6000 - 6099\600340 - Marsden Park\5. DRAWINGS\1. Build\02 Civil DA\01 Stage 01\Drawings\CardnoUT-CV-ST01-1435-1436-DWG(6).dwg

Part 3 – Specifications for the Culvert Crossings, Channel TC01, Detention Basin 3

CIVIL PLAN INDEX - CULVERT CROSSING ML 1.19		
PLAN_NO.	PLAN NAME	REV
11035005/CC150	COVER SHEET	B
11035005/CC151	GENERAL NOTES, LEGEND & INDEX	B
11035005/CC152	OVERALL ARRANGEMENT PLAN	B
11035005/CC153	SETOUT PLAN	B
11035005/CC154	LAYOUT PLAN	B
11035005/CC155	CULVERT DETAIL PLAN	B
11035005/CC156	PAVEMENT PLAN	B
11035005/CC157	ROAD 622 LONGITUDINAL SECTION, ROCK WALL & SAFETY BARRIER DETAIL	B
11035005/CC158	CULVERT SECTIONS SHEET 1	B
11035005/CC159	CULVERT SECTIONS SHEET 2	B
11035005/CC160	CULVERT SECTIONS SHEET 3	B
11035005/CC161	DROP STRUCTURE PLAN AND DETAILS	B
11035005/CC162	STORMWATER DETAILS	B
11035005/CC163	SOIL & WATER MANAGEMENT PLAN	B
11035005/CC164	SOIL & WATER MANAGEMENT NOTES	B

CIVIL PLAN INDEX - CULVERT CROSSING ML 1.16		
PLAN_NO.	PLAN NAME	REV
11035005/CC200	COVER SHEET	A
11035005/CC201	GENERAL NOTES & INDEX	B
11035005/CC202	OVERALL ARRANGEMENT PLAN	B
11035005/CC203	SETOUT PLAN	B
11035005/CC204	LAYOUT PLAN	A
11035005/CC205	CULVERT DETAIL PLAN	A
11035005/CC206	PAVEMENT PLAN	B
11035005/CC207	ROAD LONGITUDINAL SECTION AND KERB BARRIER DETAILS	A
11035005/CC208	CULVERT HEADWALL SECTIONS	A
11035005/CC209	RETAINING WALL LONGITUDINAL SECTION SHEET 1	A
11035005/CC210	RETAINING WALL LONGITUDINAL SECTION SHEET 2	A
11035005/CC211	CULVERT SECTIONS	A
11035005/CC212	KERB RETURN PLAN	A
11035005/CC213	ACCESS RAMP LONGITUDINAL SECTIONS	A
11035005/CC214	STORMWATER DETAILS	A
11035005/CC215	SOIL & WATER MANAGEMENT PLAN	A
11035005/CC216	SOIL & WATER MANAGEMENT NOTES	A

CIVIL PLAN INDEX - CULVERT CROSSING ML 1.9 (ABELL ROAD) INCLUDING ML1.12		
PLAN_NO.	PLAN NAME	REV
11035005/CC250	COVER SHEET	B
11035005/CC251	GENERAL NOTES, LEGEND & INDEX	B
11035005/CC252	OVERALL ARRANGEMENT PLAN	B
11035005/CC253	SETOUT PLAN SHEET 1	B
11035005/CC254	SETOUT PLAN SHEET 2	B
11035005/CC255	SETOUT TABLES AND FOOTPATH DETAILS	B
11035005/CC256	PAVEMENT AND GROUND COVER PLAN	B
11035005/CC257	ENGINEERING PLAN SHEET 1	B
11035005/CC258	ENGINEERING PLAN SHEET 2	B
11035005/CC259	ENGINEERING PLAN SHEET 3	B
11035005/CC260	CULVERT DETAIL PLAN	C
11035005/CC261	ABELL ROAD LONGITUDINAL SECTIONS ROCK WALL & SAFETY BARRIER DETAIL	B
11035005/CC262	HEADWALL SECTIONS	B
11035005/CC263	RETAINING WALL LONGITUDINAL SECTIONS SHEET 1	B
11035005/CC264	RETAINING WALL LONGITUDINAL SECTIONS SHEET 2	B
11035005/CC265	CULVERT SECTIONS	B
11035005/CC266	REACH 3 LONGITUDINAL SECTION	B
11035005/CC267	REACH 4 LONGITUDINAL SECTION	B
11035005/CC268	TYPICAL ROAD CROSS SECTIONS	B
11035005/CC269	FOOTPATH LONGITUDINAL SECTIONS SHEET 1	B
11035005/CC270	FOOTPATH LONGITUDINAL SECTIONS SHEET 2	B
11035005/CC271	FOOTPATH LONGITUDINAL SECTIONS SHEET 3	B
11035005/CC272	FOOTPATH LONGITUDINAL SECTIONS SHEET 4	B
11035005/CC273	CUT/FILL PLAN SHEET 1	B
11035005/CC274	CUT/FILL PLAN SHEET 2	B
11035005/CC275	DETAIL SECTIONS SHEET 1	B
11035005/CC276	DETAIL SECTIONS SHEET 2	B
11035005/CC277	SITE SECTIONS PLAN SHEET 1	B
11035005/CC278	SITE SECTIONS PLAN SHEET 2	B
11035005/CC279	SITE SECTIONS SHEET 1	B
11035005/CC280	SITE SECTIONS SHEET 2	B
11035005/CC281	SITE SECTIONS SHEET 3	B
11035005/CC282	SITE SECTIONS SHEET 4	B
11035005/CC283	SITE SECTIONS SHEET 5	B
11035005/CC284	SITE SECTIONS SHEET 6	B
11035005/CC285	SITE SECTIONS SHEET 7	B
11035005/CC286	SITE SECTIONS SHEET 8	B
11035005/CC287	STORMWATER DETAILS	B
11035005/CC288	SOIL & WATER MANAGEMENT PLAN SHEET 1	B
11035005/CC289	SOIL & WATER MANAGEMENT PLAN SHEET 2	B
11035005/CC290	SOIL & WATER MANAGEMENT PLAN SHEET 3	B
11035005/CC291	SOIL & WATER MANAGEMENT NOTES	B
11035005/CC292	TURNING PATHS SHEET 1	B
11035005/CC293	TURNING PATHS SHEET 2	B
11035005/CC294	SIGNAGE & LINEMARKING SHEET 1	B
11035005/CC295	SIGNAGE & LINEMARKING SHEET 2	B
11035005/CC296	SIGNAGE & LINEMARKING SHEET 3	B
11035005/CC297	PEDESTRIAN ISLAND SETOUT PLAN	B

CIVIL PLAN INDEX - CHANNEL ML 1.15, ML 1.18 (TC01 PART A)		
PLAN_NO.	PLAN NAME	REV
11035005/CC300	COVER SHEET	A
11035005/CC301	NOTES, INDEX AND LEGEND	A
11035005/CC302	OVERALL ARRANGEMENT PLAN	A
11035005/CC303	PAVEMENT AND GROUND COVER PLAN	A
11035005/CC304	ENGINEERING PLAN SHEET 1	A
11035005/CC305	ENGINEERING PLAN SHEET 2	A
11035005/CC306	ENGINEERING PLAN SHEET 3	A
11035005/CC307	ENGINEERING PLAN SHEET 4	A
11035005/CC308	SETOUT TABLES AND FOOTPATH DETAILS	A
11035005/CC309	CUT / FILL PLAN SHEET 1	A
11035005/CC310	CUT / FILL PLAN SHEET 2	A
11035005/CC311	CHANNEL LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC312	CHANNEL LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC313	CHANNEL AND FOOTPATH LONGITUDINAL SECTIONS SHEET 3	A
11035005/CC314	FOOTPATH LONGITUDINAL SECTIONS	A
11035005/CC315	CROSS SECTIONS PLAN SHEET 1	A
11035005/CC316	CROSS SECTIONS PLAN SHEET 2	A
11035005/CC317	CROSS SECTIONS SHEET 1	A
11035005/CC318	CROSS SECTIONS SHEET 2	A
11035005/CC319	CROSS SECTIONS SHEET 3	A
11035005/CC320	CROSS SECTIONS SHEET 4	A
11035005/CC321	CROSS SECTIONS SHEET 5	A
11035005/CC322	CROSS SECTIONS SHEET 6	A
11035005/CC323	CROSS SECTIONS SHEET 7	A
11035005/CC324	CROSS SECTIONS SHEET 8	A
11035005/CC325	CROSS SECTIONS SHEET 9	A
11035005/CC326	POCKET PARK RETAINING WALL DETAILS SHEET 1	A
11035005/CC327	POCKET PARK RETAINING WALL DETAILS SHEET 2	A
11035005/CC328	TAILOUT LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC329	TAILOUT LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC330	SOIL AND WATER MANAGEMENT PLAN SHEET 1	A
11035005/CC331	SOIL AND WATER MANAGEMENT PLAN SHEET 2	A
11035005/CC332	SOIL AND WATER MANAGEMENT NOTES	A
11035005/CC333	SIGNAGE AND LINEMARKING PLAN SHEET 1	A
11035005/CC334	SIGNAGE AND LINEMARKING PLAN SHEET 2	A
11035005/CC335	SIGNAGE AND LINEMARKING PLAN SHEET 3	A
11035005/CC336	SIGNAGE AND LINEMARKING PLAN SHEET 4	A

CIVIL PLAN INDEX - CHANNEL ML 1.7 (TC01 PART B)		
PLAN_NO.	PLAN NAME	REV
11035005/CC350	COVER SHEET	A
11035005/CC351	NOTES, INDEX AND LEGEND	A
11035005/CC352	OVERALL ARRANGEMENT PLAN	A
11035005/CC353	PAVEMENT AND GROUND COVER PLAN	A
11035005/CC354	ENGINEERING PLAN SHEET 1	A
11035005/CC355	ENGINEERING PLAN SHEET 2	A
11035005/CC356	ENGINEERING PLAN SHEET 3	A
11035005/CC357	SETOUT TABLES, FOOTPATH DETAILS AND TYPICAL ROAD SECTION	A
11035005/CC358	CUT / FILL PLAN SHEET 1	A
11035005/CC359	CUT / FILL PLAN SHEET 2	A
11035005/CC360	CHANNEL LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC361	CHANNEL LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC362	FOOTPATH LONGITUDINAL SECTIONS	A
11035005/CC363	CROSS SECTIONS PLAN SHEET 1	A
11035005/CC364	CROSS SECTIONS PLAN SHEET 2	A
11035005/CC365	CROSS SECTIONS SHEET 1	A
11035005/CC366	CROSS SECTIONS SHEET 2	A
11035005/CC367	CROSS SECTIONS SHEET 3	A
11035005/CC368	CROSS SECTIONS SHEET 4	A
11035005/CC369	CROSS SECTIONS SHEET 5	A
11035005/CC370	CROSS SECTIONS SHEET 6	A
11035005/CC371	CROSS SECTIONS SHEET 7	A
11035005/CC372	CROSS SECTIONS SHEET 8	A
11035005/CC373	CROSS SECTIONS SHEET 9	A
11035005/CC374	CROSS SECTIONS SHEET 10	A
11035005/CC375	POCKET PARK LONGITUDINAL SECTIONS	A
11035005/CC376	DETAIL SECTIONS SHEET 1	A
11035005/CC377	DETAIL SECTIONS SHEET 2	A
11035005/CC378	GPT ACCESS DETAILS	A
11035005/CC379	SOIL AND WATER MANAGEMENT PLAN SHEET 1	A
11035005/CC380	SOIL AND WATER MANAGEMENT PLAN SHEET 2	A
11035005/CC381	SOIL AND WATER MANAGEMENT NOTES	A
11035005/CC382	SIGNAGE AND LINEMARKING PLAN	A

CIVIL PLAN INDEX - BASIN ML 1.0 AND RAINGARDEN ML 1.1		
PLAN_NO.	PLAN NAME	REV
11035005/CC400	COVER SHEET	A
11035005/CC401	GENERAL NOTES, LEGEND & INDEX	B
11035005/CC402	OVERALL ARRANGEMENT PLAN	A
11035005/CC403	ENGINEERING PLAN SHEET 1	A
11035005/CC404	ENGINEERING PLAN SHEET 2	A
11035005/CC405	ENGINEERING PLAN SHEET 3	A
11035005/CC406	CUT AND FILL PLAN	A
11035005/CC407	PAVEMENT AND GROUND COVER PLAN	A
11035005/CC408	FLOOD PLANNING EXTENT PLAN	A
11035005/CC409	PEDESTRIAN BRIDGE DETAIL PLAN	A
11035005/CC410	PEDESTRIAN BRIDGE SECTIONS AND SETOUT TABLE	A
11035005/CC411	BOARDWALK DETAIL PLAN	A
11035005/CC412	BOARDWALK SECTIONS AND SETOUT TABLES	A
11035005/CC413	RAINGARDEN WEST DETAIL PLAN	A
11035005/CC414	MAIN OUTLET DETAIL PLAN	A
11035005/CC415	RAINGARDEN EAST DETAIL PLAN	A
11035005/CC416	MAIN OUTLET DETAILS AND SECTIONS	A
11035005/CC417	BASIN OUTLET PIT DETAILS	A
11035005/CC418	GENERAL RAINGARDEN DETAILS	A
11035005/CC419	RAINGARDEN MAINTENANCE TRACK DETAILS AND SETOUT TABLES	A
11035005/CC420	RAINGARDEN MAINTENANCE TRACK LONGITUDINAL SECTIONS	A
11035005/CC421	RAINGARDEN HEADWALL DETAILS	A
11035005/CC422	RAINGARDEN CONSTRUCTION STAGING DETAILS	A
11035005/CC423	EMBANKMENT DETAIL PLAN	B
11035005/CC424	EMBANKMENT LONG SECTION	A
11035005/CC425	EMBANKMENT DETAIL SHEET	B
11035005/CC426	GPT ACCESS PLAN	A
11035005/CC427	POCKET PARK DETAIL PLAN SHEET 1	A
11035005/CC428	POCKET PARK DETAIL PLAN SHEET 2	A
11035005/CC429	GENERAL DETAILS	A
11035005/CC430	STORMWATER PIT SCHEDULE AND CALCULATION TABLES	A
11035005/CC431	STORMWATER LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC432	STORMWATER LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC433	STORMWATER LONGITUDINAL SECTIONS SHEET 3	A
11035005/CC434	SETOUT TABLES AND FOOTPATH DETAILS	A
11035005/CC435	FOOTPATH LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC436	FOOTPATH LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC437	FOOTPATH LONGITUDINAL SECTIONS SHEET 3	A
11035005/CC438	FOOTPATH LONGITUDINAL SECTIONS SHEET 4	A
11035005/CC439	FOOTPATH LONGITUDINAL SECTIONS SHEET 5	A
11035005/CC440	FOOTPATH LONGITUDINAL SECTIONS SHEET 6	A
11035005/CC441	FOOTPATH LONGITUDINAL SECTIONS SHEET 7	A
11035005/CC442	FOOTPATH LONGITUDINAL SECTIONS SHEET 8	A
11035005/CC443	FOOTPATH LONGITUDINAL SECTIONS SHEET 9	A
11035005/CC444	SITE SECTION KEY PLAN	A
11035005/CC445	SITE SECTIONS SHEET 1	A
11035005/CC446	SITE SECTIONS SHEET 2	A
11035005/CC447	SITE SECTIONS SHEET 3	A
11035005/CC448	SITE SECTIONS SHEET 4	A
11035005/CC449	SITE SECTIONS SHEET 5	A
11035005/CC450	SOIL & WATER MANAGEMENT PLAN	A

11035005/CC451	SOIL & WATER MANAGEMENT NOTES	A
11035005/CC452	TURNING PATHS	A
11035005/A100	SPECIAL PIT 01-1	A

ELARA P5 PARKLANDS: REACH 1 – LANDSCAPE WORKS		
DRAWING NO.	TITLE	REV
LA-100	COVER SHEET & CONTEXT PLAN	
LA-101	SHEET REFERENCE PLAN	
LA-102	LEGEND	
LA-103	PLANT SCHEDULES	
	LANDSCAPE PLAN	
LA-200	LANDSCAPE PLAN	
	ENLARGEMENTS	
LA-300	POCKET PARKS	
	DETAILS	
LA-400	SITE FURNITURE	
LA-410	HARDSCAPE	
LA-430	PLANTING DETAILS	
LA-431	TREE PLANTING DETAILS	
LA-432	CREEK PLANTING DETAILS	
LA-440	WALLS & STAIRS	
LA-450	HANDRAIL & GATE DETAILS	
	SPECIFICATIONS	
LA-500	LANDSCAPE SPECIFICATIONS	

ELARA P5 PARKLANDS: REACH 2 – LANDSCAPE WORKS		
DRAWING NO.	TITLE	REV
LA-100	COVER SHEET & CONTEXT PLAN	
LA-101	SHEET REFERENCE PLAN	
LA-102	LEGEND	
LA-103	PLANT SCHEDULES	
	LANDSCAPE PLAN	
LA-200	LANDSCAPE PLAN	
LA-201	LANDSCAPE PLAN	
	ENLARGEMENTS	
LA-300	POCKET PARKS [POND 1	
LA-301	POCKET PARKS [PEDESTRIAN BRIDGE 1	
	DETAILS	
LA-400	SITE FURNITURE	
LA-410	HARDSCAPE	
LA-430	PLANTING DETAILS	
LA-431	TREE PLANTING DETAILS	
LA-432	CREEK PLANTING DETAILS	
LA-440	WALLS & STAIRS	
LA-450	HANDRAIL & GATE DETAILS	
LA-460	REFERENCE SECTION	
	SPECIFICATIONS	
~~LA-500~~	~~LANDSCAPE SPECIFICATIONS~~	

ELARA P5 PARKLANDS: REACH 3 – LANDSCAPE WORKS		
DRAWING NO.	TITLE	REV
LA-100	COVER SHEET & CONTEXT PLAN	
LA-101	SHEET REFERENCE PLAN	
LA-102	LEGEND	
LA-103	PLANT SCHEDULES	
	LANDSCAPE PLAN	
LA-200	LANDSCAPE PLAN	
LA-201	LANDSCAPE PLAN	
	ENLARGEMENTS	
LA-300	SOUTHERN PARK	
LA-301	POCKET PARKS [POND 3	
LA-302	POCKET PARKS [POND 4] PEDESTRIAN BRIDGE 2	
	DETAILS	
LA-400	SITE FURNITURE	
LA-410	HARDSCAPE	
LA-430	PLANTING DETAILS	
LA-431	TREE PLANTING DETAILS	
LA-432	CREEK PLANTING DETAILS	
LA-433	WETLAND PLANTING DETAILS	
LA-440	WALLS & STAIRS	
LA-441	WALLS & STAIRS	
LA-450	HANDRAIL & GATE DETAILS	
LA-460	REFERENCE SECTION	
	SPECIFICATIONS	
~~LA-500~~	~~LANDSCAPE SPECIFICATIONS~~	

ELARA P5 PARKLANDS: BASIN – LANDSCAPE WORKS		
DRAWING NO.	TITLE	REV
LA-100	COVER SHEET & CONTEXT PLAN	
LA-101	SHEET REFERENCE PLAN	
LA-102	LEGEND	
LA-103	PLANT SCHEDULES	
	LANDSCAPE PLAN	
LA-200	LANDSCAPE PLAN	
LA-201	LANDSCAPE PLAN	
LA-201	LANDSCAPE PLAN	
	ENLARGEMENTS	
LA-300	POCKET PARKS	
LA-301	PICNIC AREA & BOARDWALK	
	DETAILS	
LA-400	SITE FURNITURE	
LA-410	HARDSCAPE	
LA-430	PLANTING DETAILS	
LA-431	TREE PLANTING DETAILS	

LA-433	WETLAND PLANTING DETAILS	
LA-440	WALLS & STAIRS	
LA-450	HANDRAIL & GATE DETAILS	
LA-460	REFERENCE SECTION	
SPECIFICATIONS		
~~LA-500~~	~~LANDSCAPE SPECIFICATIONS~~	

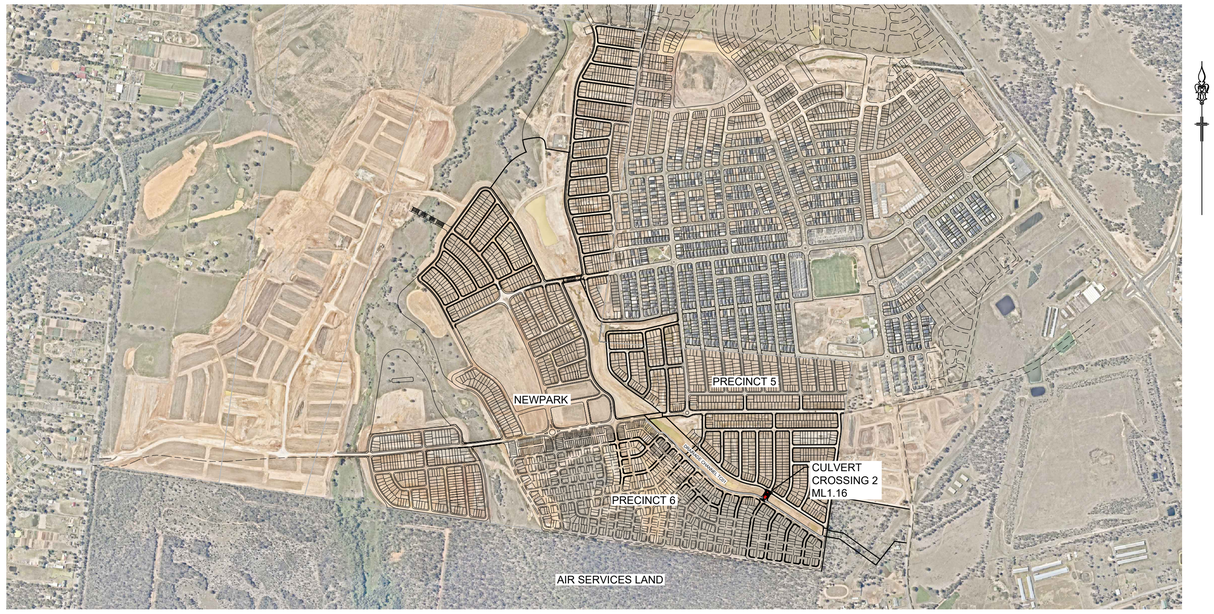
ELARA P5 PARKLANDS: FURNITURE & EXERCISE EQUIPMENT REACH 1-3 & BASIN		
DRAWING NO.	TITLE	REV
LA-600	F1 - BENCH SEAT	
LA-601	F2 – PICNIC TABLE	
LA-602	F3 – BIKE RACK	
LA-603	F5 – DRINKING FOUNTAIN	
LA-604	F6 – SHELTER	
LA-605	F7 – BIN	
LA-607	B1/B3 – FIXED BOLLARD	
LA-608	E1 – COMBI 1	
LA-609	E2 – PARALLEL BARS	
LA-610	E3 – MAGNETIC BELLS	
LA-611	E4 – STEP 20CM	
LA-612	E5 – STEP 40CM	
LA-613	E6 – STEP 60CM	
LA-614	E7 – SUSPENSION TRAINER	
LA-615	E8 – COMBI 1	

Plans for the above specifications for the Culvert Crossings, Channel TC01, Detention Basin 3 on the following pages

Stockland

ELARA - PRECINCT 6
SECTION 7.11 CONSTRUCTION CERTIFICATE

CULVERT CROSSING WORKS
CONTRIBUTION PLAN No.21, ITEMS ML1.16 & MP10.7
COUNCIL REFERENCE: DA-18-00400



LOCALITY SKETCH

Prepared By:

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300
W www.jwprince.com.au
E jwp@jwprince.com.au

ISSUED FOR CONSTRUCTION APPROVAL

PLAN No. 11035005/CC200 A

FILE No. 11035005CC200

Plotted: November 27, 2018 File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC200.dwg

LEGEND

DESCRIPTION	PROPOSED	EXISTING	FUTURE
EXTENT OF WORKS			
KERB & GUTTER	K&G		
ROLL KERB	RK		
DISH CROSSING	DC		
PRAM RAMP			
DRAINAGE LINE, PIT & EASEMENT	05/05 Ø225		
DRAINAGE LINE & PIT	05/06 Ø600		
SUBSOIL DRAINAGE	SS SS		
HEADWALL			
CONTOURS	46.0	47.0	
CATCH DRAIN			
ELECTRICITY, POWER POLE	E E E E	eE eE FP eE	
TELECOM, BOX	T T T T	eT eT eT eT	
WATER, STOP VALVE, HYDRANT	W W W W	eW eW HYD eW SV	
SEWER, MANHOLE	S S S S	eS eS SMH	
GAS	G G G G	eG eG eG	
STABILISED SITE ACCESS			
SEDIMENT FENCE			
STRAW BALE BARRIER			
STOCKPILE	SP		
PROTECTIVE FENCING			
MESH AND GRAVEL INLET FILTER			
GEOTEXTILE INLET FILTER			
CATCHMENT BOUNDARY			
FLOW DIRECTION ARROW			
CONCRETE PAVEMENT			

CIVIL PLAN INDEX

PLAN NO.	PLAN NAME	REV
11035005/CC200	COVER SHEET	A
11035005/CC201	GENERAL NOTES & INDEX	B
11035005/CC202	OVERALL ARRANGMENT PLAN	B
11035005/CC203	SETOUT PLAN	B
11035005/CC204	LAYOUT PLAN	A
11035005/CC205	CULVERT DETAIL PLAN	A
11035005/CC206	PAVEMENT PLAN	B
11035005/CC207	ROAD LONGITUDINAL SECTION AND KERB BARRIER DETAILS	A
11035005/CC208	CULVERT HEADWALL SECTIONS	A
11035005/CC209	RETAINING WALL LONGITUDINAL SECTION SHEET 1	A
11035005/CC210	RETAINING WALL LONGITUDINAL SECTION SHEET 2	A
11035005/CC211	CULVERT SECTIONS	A
11035005/CC212	KERB RETURN PLAN	A
11035005/CC213	ACCESS RAMP LONGITUDINAL SECTIONS	A
11035005/CC214	STORMWATER DETAILS	A
11035005/CC215	SOIL & WATER MANEGEMENT PLAN	A
11035005/CC216	SOIL & WATER MANEGEMENT NOTES	A

CONTRIBUTIONS PLAN (NO.21) ITEMS INCLUDED IN THIS APPLICATION

SITE NO.	DESCRIPTION
ML 1.16	CULVERT CROSSING
MP 10.7	LOCAL ROAD - FULL WIDTH CROSSING

GENERAL NOTES

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S "WORKS SPECIFICATION - CIVIL 2005".
2. SURVEY MARKS: -

   a. SURVEY MARKS SHOWN SHALL BE RETAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE SUPERINTENDENT MUST BE NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL.

3. THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
4. THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE OWNERS. TO BE PROVIDED PRIOR TO THE APPROVAL OF THE PLANS.
5. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJOINING PROPERTIES.
6. COUNCIL'S TREE PRESERVATION ORDER MUST BE OBSERVED AND NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT THE PRIOR APPROVAL OF COUNCIL'S ENGINEER.
7. TREES TO BE RETAINED ON SITE SHALL BE PROTECTED BY SUITABLE STURDY APPROVED PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF SITE WORKS.
8. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES, OUT-HOUSES, CAR BODIES AND DEBRIS ETC.
9. FILLING IS TO BE FROM A NOMINATED SOURCE, OF SOUND CLEAN MATERIAL, FREE FROM LARGE ROCK, STUMPS, CONTAMINATED MATTER, INDUSTRIAL AND BUILDING WASTE, ORGANIC MATTER AND OTHER DEBRIS. PLACING OF FILLING ON THE PREPARED AREAS SHALL NOT COMMENCE UNTIL THE AUTHORITY TO DO SO HAS BEEN OBTAINED FROM THE COUNCIL.
10. THE FILL MATERIAL THAT MAY BE RECEIVED AT THE DEVELOPMENT SITE ARE EXCAVATED NATURAL MATERIALS (VENM) AND EXCAVATED NATURAL MATERIAL (ENM) WITHIN THE MEANING OF THE PROTECTION OF THE ENVIRONMENTAL OPERATIONS ACT1997.
11. SITE FILL AREAS: - THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
12. ALL SITE FILLING TO BE COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY A REGISTERED SOIL LABORATORY IN ACCORDANCE WITH COUNCIL'S "WORKS SPECIFICATION".
13. ALL SITE REGRADING AREAS SHALL BE GRADED AT A MINIMUM 1% TO THE ENGINEER'S REQUIREMENTS.
14. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED BY THE SUPERINTENDENT.
15. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS.
16. DIMENSIONS OF ANY DETAIL SHALL NOT BE SCALED - DIMENSIONS, IF IN DOUBT, SHALL BE VERIFIED BY THE SUPERINTENDENT.
17. ALL CONSTRUCTION AND RESTORATION WORK ON COUNCIL'S ROAD AND FOOTPATH AREA ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS AND COUNCIL'S STANDARD SPECIFICATIONS.
18. ALL WORKS TO BE IN ACCORDANCE WITH THE SALINITY MANAGEMENT PLAN BY GEOTECH TESTING PTY LTD 8537/2-AA.
19. ALL STREET NAME POLES AND LIGHT POLES SHALL BE BLACK POWDER COATED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S ENGINEERING GUIDE FOR DEVELOPMENT.

NOTE:
THESE PLANS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING
- THE ELARA SECTION 94 DETAILED CONCEPT PLANS BY J.WYNDHAM PRINCE 11035005/DC01 - 72
- LANDSCAPED CHANNEL TC01 PART 1 1 ML 1.15, ML1.18 REFER TO J.WYNDHAM PRINCE 11035005/CC300-CC336
- CHANNEL TC02 ML1.22 REFER TO J.WYNDHAM PRINCE PLANS 11035005/CC100-CC136
- CULVERT CROSSING 2 ML 1.19 , REFER TO J.WYNDHAM PRINCE 11035005/CC150-CC164
- ABELL ROAD CULVERT CROSSING, REFER TO J.WYNDHAM PRINCE 11035005/CC250-CC300
- LANDSCAPE PLANS BY PATERSON DESIGN STUDIO.

SURFACE NOTES

1. BATTER SLOPES ARE TYPICALLY 1v:5h UNLESS NOTED OTHER WISE.
2. EXISTING SURFACE BASED ON BULK EARTHWORKS SURFACE REFER TO JWP PLANS 1103502CC000-CC108

SURVEY SET OUT INFORMATION NOTES:

1. ALL SITE SET OUT AND CONTROL POINTS ARE TO BE CERTIFIED BY A REGISTERED SURVEYOR.
2. THE INFORMATION DETAILED ON THE CERTIFIED CONSTRUCTION CERTIFICATE PLANS TAKES PRECEDENCE OVER ALL ELECTRONIC INFORMATION PROVIDED. THE ORDER OF PRIORITY FOR USE OF ALL INFORMATION PROVIDED IS AS FOLLOWS:

   a. CERTIFIED CONSTRUCTION CERTIFICATE DRAWINGS
   b. 2D DRAFTING BASE (ELECTRONIC FILE)
   c. 3D DTM (ELECTRONIC FILE)

3. ANY DISCREPANCY BETWEEN ANY OF THE INFORMATION CONTAINED WITHIN THESE FILES IS TO BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT PRIOR TO CONSTRUCTION WHO WILL SEEK CLARIFICATION AND ISSUE INSTRUCTIONS ON THE APPROPRIATE COURSE OF ACTION.

STORMWATER NOTES

1. STORMWATER DESIGN CRITERIA:

   AVERAGE RECURRANCE INTERVAL:
   1:100 MAJOR SYSTEM
   1:10 MINOR SYSTEM

2. PIPES TO BE INSTALLED TO TYPE HS2 SUPPORT IN ACCORDANCE WITH AS 3725 (1989) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 300mm LAYERS TO MINIMUM 100% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
3. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 (1998) AND AS/NZS 3500 3.2 (1998).
4. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
5. GRATES AND COVERS SHALL CONFORM TO AS 3996.
6. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
7. DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH NON-COHESIVE SAND AND HAVE 3m OF SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK, DISCHARGING INTO DOWN STREAM PITS. FOR PIPELINES GREATER THAN 525Ø, SUBSOIL DRAIN SHALL BE PROVIDED ON BOTH SIDES OF THE TRENCH.
8. ALL STORMWATER PIPES WITHIN ROADS TO BE REINFORCED CONCRETE PIPE (RRJ) CLASS 2 OR FRC CLASS 2 UNLESS NOTED OTHERWISE.
9. DRAINAGE LINES ON PLANS ARE DIAGRAMMATIC ONLY AND PIPE CENTRELINES SHALL ENTER AND EXIT PITS AT THE CENTRE OF THE RESPECTIVE PIT WALLS.
10. STEP IRONS REQUIRED WHERE THE PIT EXCEEDS 1200 IN DEPTH. REFER TO COUNCIL DRAWING A(BS)107M.

CUSTOM MADE PRECAST PIT NOTES

1. DESIGN DOCUMENTATION REFLECTS PRECAST DRAINAGE PITS BEING USED FOR THE SITE. UNLESS NOTED OTHERWISE. AUSPITS OR SIMILAR APPROVED CUSTOM MADE PRECAST PITS TO BE USED.
2. PITS TO COMPLY WITH THE FOLLOWING PARAMETERS:

   a. ARE SPECIFICALLY MANUFACTURED FOR THE PROJECT.
   b. EACH PIT IS ACCOMPANIED BY A CERTIFICATE OF STRUCTURAL ADEQUACY SIGNED BY A NPER ENGINEER (STRUCTURAL)
   c. THE STRUCTURAL CERTIFICATION OF THE PITS SHOULD INCLUDE ANY ADDITIONAL PRECAST ELEMENTS REQUIRED TO BRING THE PIT UP TO FINAL LEVELS ON SITE.
   d. PITS MUST BE FIRMLY BEDDED ON SOUND MATERIAL.
   e. CONCRETE IS TO BE POURED AROUND THE BASE TO AID IN STABILISATION OF THE PIT.
   f. PIT FLOORS ARE TO HAVE A 1% FALL TOWARDS THE OUTLET PIPE.
   g. ANY PIT REQUIRING MODIFICATION AFTER IT HAS BEEN POURED IN THE FACTORY OR DAMAGED IN TRANSPORT CANNOT BE USED.
   h. ALL WORK TO BE TO THE SATISFACTION OF COUNCIL'S DEVELOPMENT INSPECTORS.

3. SHOULD THE CONTRACTOR CHOOSE TO CONSTRUCT ANY PIT AS "CAST-INSITU", IT'S THE CONTRACTORS RESPONSIBILITY TO PROVIDE DETAILED PIT DRAWINGS AND STRUCTURAL CERTIFICATION OF THE RELEVANT PITS.

SURVEYED BY:
BMD BULK EARTHWORKS SURFACE
CAD REFERENCE: tin BEW 171214.12daz
DATE RECEIVED: 29/01/2018

CRAIG & RHODES DRONE SURVEY
CAD REFERENCE: 20180213_C&R_MARSDEN-PARK_ELEVATION.dwg
DATE RECEIVED: 22/02/2018

www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG

UTILITIES SHOWN ARE DIAGRAMMATIC ONLY, CONTRACTORS ARE RESPONSIBLE TO LOCATE AND AVOID DAMAGE TO THEM AS SPECIFIED BY EACH UTILITIES EXCAVATION GUIDE LINES & STANDARDS.

NOTE: UTILITIES SHOWN MAY NOT INCLUDE ALL SERVICES WITHIN THE LIMIT OF WORKS

B	INDEX UPDATED	PS	UF	AM	MS	27/11/18
A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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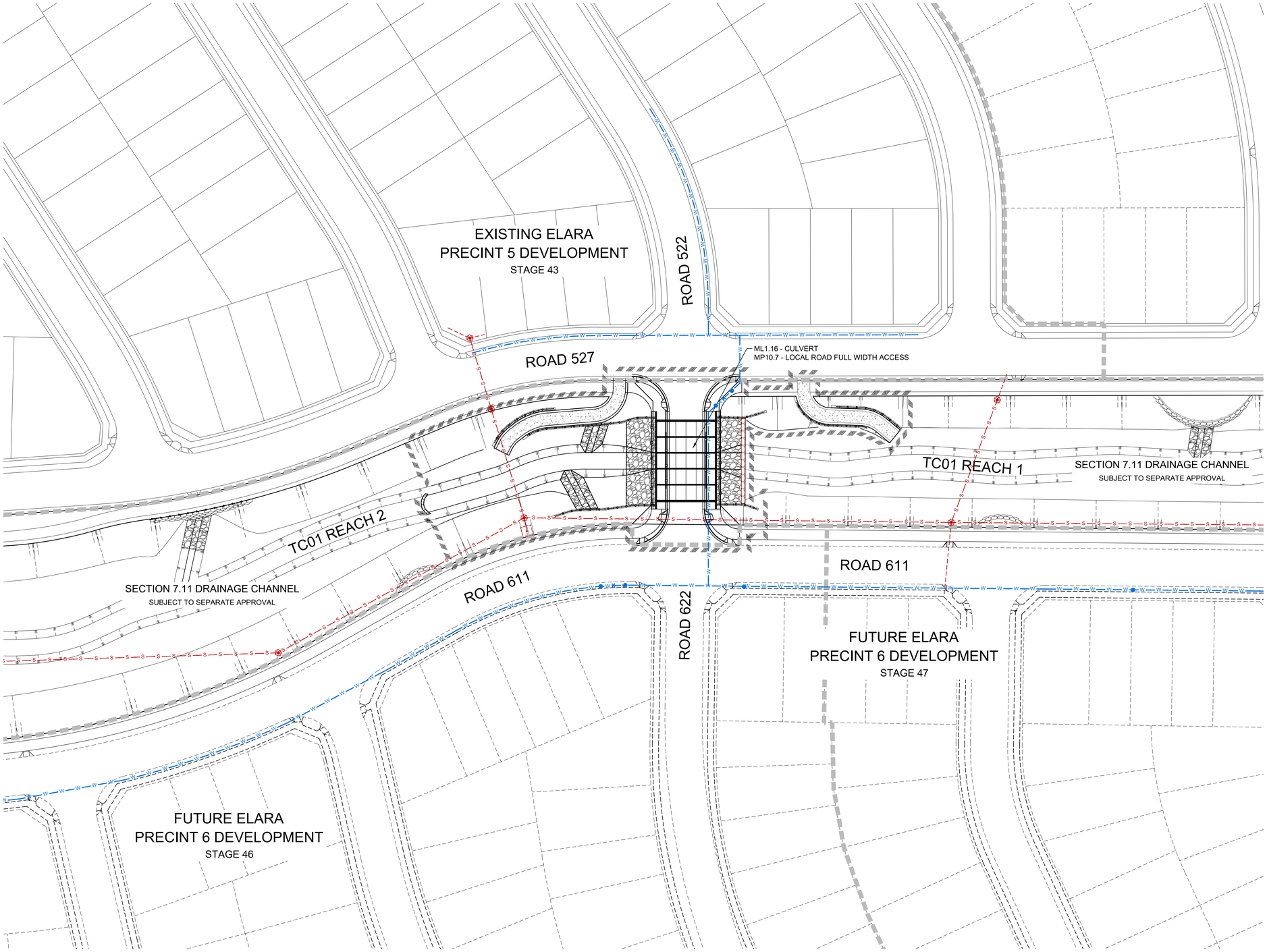
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.16
GENERAL NOTES & INDEX

PLAN No: 11035005/CC201 B
FILE No: 11035005CC201
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:12:32 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC201.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50

METRES

CLIENT:

Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.16
OVERALL ARRANGMENT PLAN

PLAN No: 11035005/CC202 B

FILE No: 11035005CC202

SHEET SIZE: A1 ORIGINAL

AZIMUTH:

DATUM:

ORIGIN:

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

B	PLAN RENAMED	PS	UF	AM	MS	27/11/18
A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

Plotted: 27 November , 2018 10:12:45 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC202.dwg

RETAINING WALL 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297438.18	6268473.86	302°49'23.69"		
3.71	297435.06	6268475.87	302°49'23.69"		
5	297433.98	6268476.57		-20	2.58
6.29	297432.81	6268477.13	295°25'40.24"		
11.35	297428.24	6268479.3	295°25'40.24"		
12.3	297427.38	6268479.71		20	1.9
13.25	297426.57	6268480.2	300°52'34.41"		
18.31	297422.22	6268482.79	300°52'34.41"		
20.06	297420.71	6268483.7		-12	3.49
21.8	297419.01	6268484.13	284°13'50.23"		
25.23	297415.68	6268484.97	284°13'50.23"		

RETAINING WALL 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297420.46	6268505.22	85°14'35.75"		
0	297420.46	6268505.22			
3.3	297423.84	6268505.5		11.5	6.6
6.6	297426.84	6268503.9	118°08'16.80"		
22.95	297441.25	6268496.19	118°08'16.80"		
24.38	297442.52	6268495.51		-10	2.87
25.82	297443.94	6268495.22	101°42'43.19"		
27.66	297445.76	6268494.84		10	3.68
29.5	297447.33	6268493.83	122°49'23.69"		
32.63	297449.95	6268492.14	122°49'23.69"		

RETAINING WALL 3

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297462.47	6268484.18	124°20'16.29"		
5.49	297467	6268481.09	124°20'16.29"		
6.76	297468.06	6268480.36		-8	2.55
8.04	297469.3	6268480.01	106°05'13.58"		
11.67	297472.79	6268479	106°05'13.58"		

RETAINING WALL 4

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297458.83	6268459.2	322°15'23.15"		
2.62	297457.22	6268461.28	322°15'23.15"		
3.98	297456.38	6268462.36		-8	2.71
5.34	297455.23	6268463.1	302°49'23.69"		
10.7	297450.72	6268466.01	302°49'23.69"		

RETAINING WALL 5

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297412.94	6268507.62	58°37'52.53"		
1.11	297413.89	6268508.2	58°37'52.53"		
3.71	297416.15	6268509.58		11.2	5.2
6.31	297418.79	6268509.8	85°14'32.16"		
7.59	297420.07	6268509.91	85°14'32.16"		
12.24	297424.83	6268510.3		16.2	9.3
16.89	297429.05	6268508.05	118°08'16.80"		
18.59	297430.55	6268507.25	118°08'16.80"		

RETAINING WALL 6

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297487.38	6268471.16	124°43'12.10"		
6.79	297492.96	6268467.29	124°43'12.10"		
10.44	297496.08	6268465.14		11.1	7.3
14.09	297497.22	6268461.52	162°25'16.22"		
18.37	297498.51	6268457.45	162°25'16.22"		

RETAINING WALL 7

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297481.03	6268477.32	197°54'31.46"		
5.43	297479.09	6268471.31		-8.5	10.86
10.86	297484.28	6268467.72	124°43'12.10"		
18.24	297490.34	6268463.51	124°43'12.10"		
19.12	297491.07	6268463.01		6.5	1.77
20	297491.64	6268462.32	140°18'00.45"		

ACCESS 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297489.09	6268483.91	212°41'32.76"		
7.74	297484.91	6268477.4	212°41'32.76"		
11.57	297482.31	6268473.34		-5	7.68
15.41	297486.27	6268470.59	124°43'12.10"		
22.79	297492.34	6268466.39	124°43'12.10"		
26.08	297495.14	6268464.45		10	6.58
29.37	297496.17	6268461.19	162°25'16.22"		
33.64	297497.47	6268457.12	162°25'16.22"		

ACCESS 1A

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297486.57	6268485.53	212°41'32.76"		
7.74	297482.39	6268479.02	212°41'32.76"		
13.88	297478.22	6268472.52		-8	12.28
20.02	297484.56	6268468.13	124°43'12.10"		
27.4	297490.63	6268463.92	124°43'12.10"		
29.7	297492.59	6268462.56		7	4.61
32	297493.31	6268460.29	162°25'16.22"		
36.28	297494.61	6268456.21	162°25'16.22"		

ACCESS 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297449.07	6268509.6	212°41'32.76"		
7.43	297445.06	6268503.35	212°41'32.76"		
11.16	297442.56	6268499.46		5	7.46
14.89	297438.49	6268501.64	298°08'16.80"		
26.23	297428.49	6268506.99	298°08'16.80"		
30.54	297424.58	6268509.08		-15	8.61
34.84	297420.17	6268508.71	265°14'32.16"		
36.12	297418.89	6268508.6	265°14'32.16"		
38.45	297416.54	6268508.41		-10	4.64
40.77	297414.52	6268507.18	238°37'52.53"		
42.19	297413.3	6268506.44	238°37'52.53"		

ACCESS 2A

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297451.6	6268507.98	212°41'32.76"		
7.43	297447.58	6268501.73	212°41'32.76"		
13.39	297443.59	6268495.51		8	11.93
19.36	297437.08	6268498.99	298°08'16.80"		
30.71	297427.07	6268504.34	298°08'16.80"		
34.15	297423.95	6268506.01		-12	6.89
37.6	297420.42	6268505.72	265°14'32.16"		
38.88	297419.14	6268505.61	265°14'32.16"		
40.5	297417.49	6268505.48		-7	3.25
42.13	297416.08	6268504.62	238°37'52.53"		
43.55	297414.86	6268503.87	238°37'52.53"		

TC01 REACH 1

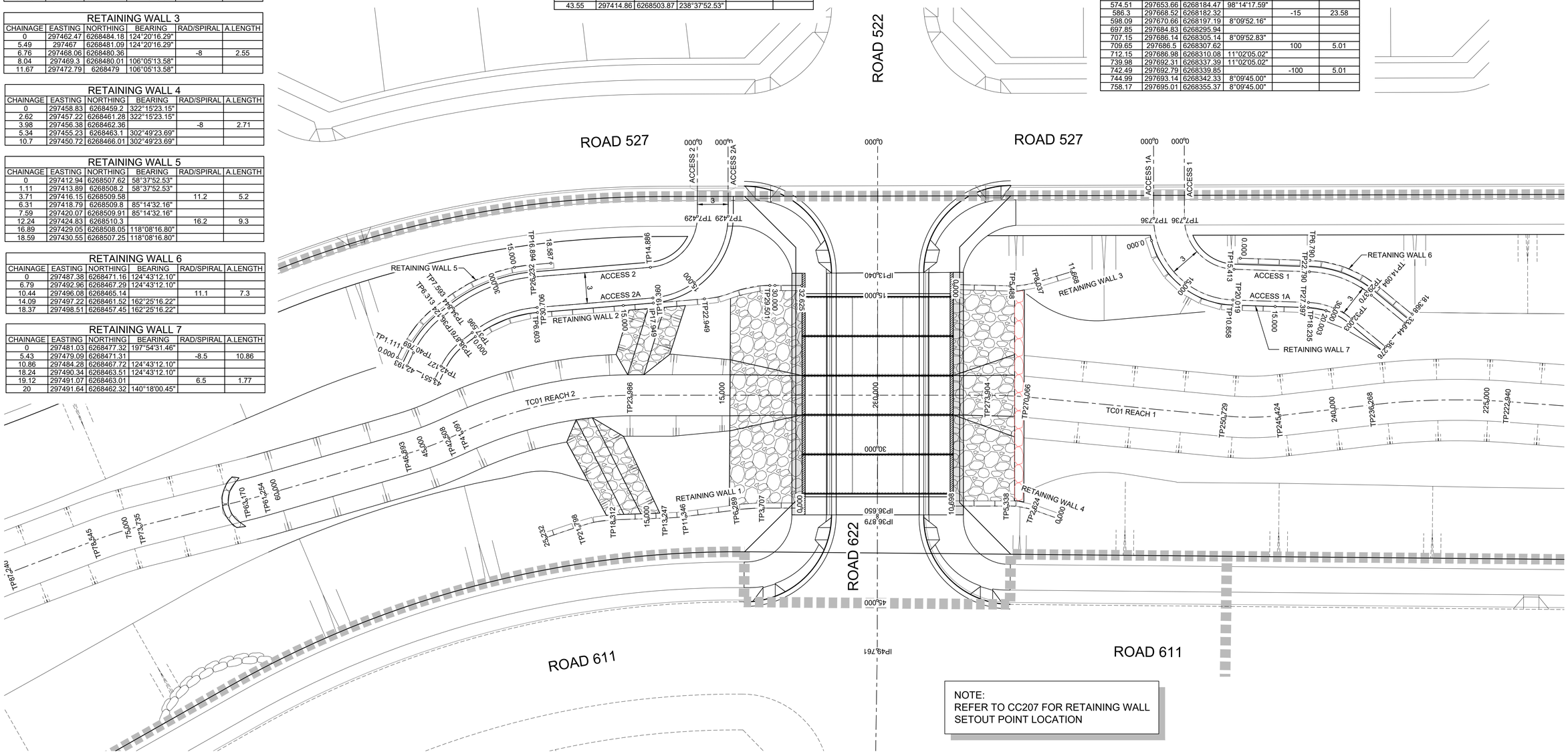
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
205.25	297516.12	6268434.67	299°42'28.95"		
207.18	297514.44	6268435.63		30	3.86
209.11	297512.9	6268436.79	307°04'17.16"		
222.94	297501.87	6268445.13	307°04'17.16"		
229.6	297496.54	6268449.16		-70	13.33
236.27	297490.54	6268452.11	296°09'45.90"		
245.42	297482.32	6268456.15	296°09'45.90"		
248.08	297479.93	6268457.32		25	5.3
250.73	297477.84	6268458.97	308°19'12.76"		
270.07	297462.67	6268470.96	308°19'12.76"		
271.98	297461.16	6268472.15		-40	3.84
273.9	297459.55	6268473.19	302°49'23.69"		
284.83	297450.37	6268479.11	302°49'23.69"		

TC01 REACH 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297450.37	6268479.11	302°49'23.69"		
23.99	297430.21	6268492.11	302°49'23.69"		
32.54	297422.91	6268496.82		-40	17.11
41.09	297414.32	6268498.08	278°19'17.92"		
42.51	297412.92	6268498.28	278°19'17.92"		
44.7	297410.75	6268498.6		30	4.39
46.89	297408.64	6268499.23	286°41'49.23"		
61.25	297394.89	6268503.36	286°41'49.23"		
62.21	297393.97	6268503.63		50	1.92
63.17	297393.06	6268503.94	288°53'32.07"		
73.73	297383.07	6268507.37	288°53'32.07"		
76.14	297380.79	6268508.14		-40	4.81
78.54	297378.43	6268508.65	282°00'08.11"		

ROAD 622

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297463.9	6268500.08	212°52'10.67"		
49.76	297436.89	6268458.29			
93.24	297412.75	6268422.12	213°43'00.04"		
122.13	297396.45	6268397.69		-130	57.78
151.02	297392.23	6268368.61	188°14'59.96"		
280.8	297373.61	6268240.18	188°14'59.96"		
292.59	297371.46	6268225.33		-15	23.57
304.37	297386.31	6268223.18	98°14'17.59"		
574.51	297653.66	6268184.47	98°14'17.59"		
586.3	297668.52	6268182.32		-15	23.58
598.09	297670.66	6268197.19	8°09'52.16"		
697.85	297684.83	6268295.94			
707.15	297686.14	6268305.14	8°09'52.83"		
709.65	297686.5	6268307.62		100	5.01
712.15	297686.98	6268310.08	11°02'05.02"		
739.98	297692.31	6268337.39	11°02'05.02"		
742.49	297692.79	6268339.85		-100	5.01
744.99	297693.14	6268342.33	8°09'45.00"		
758.17	297695.01	6268355.37	8°09'45.00"		



NOTE:
REFER TO CC207 FOR RETAINING WALL SETOUT POINT LOCATION

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

B	ROAD NAME AMENDED	PS	UF	AM	MS	27/11/18
A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

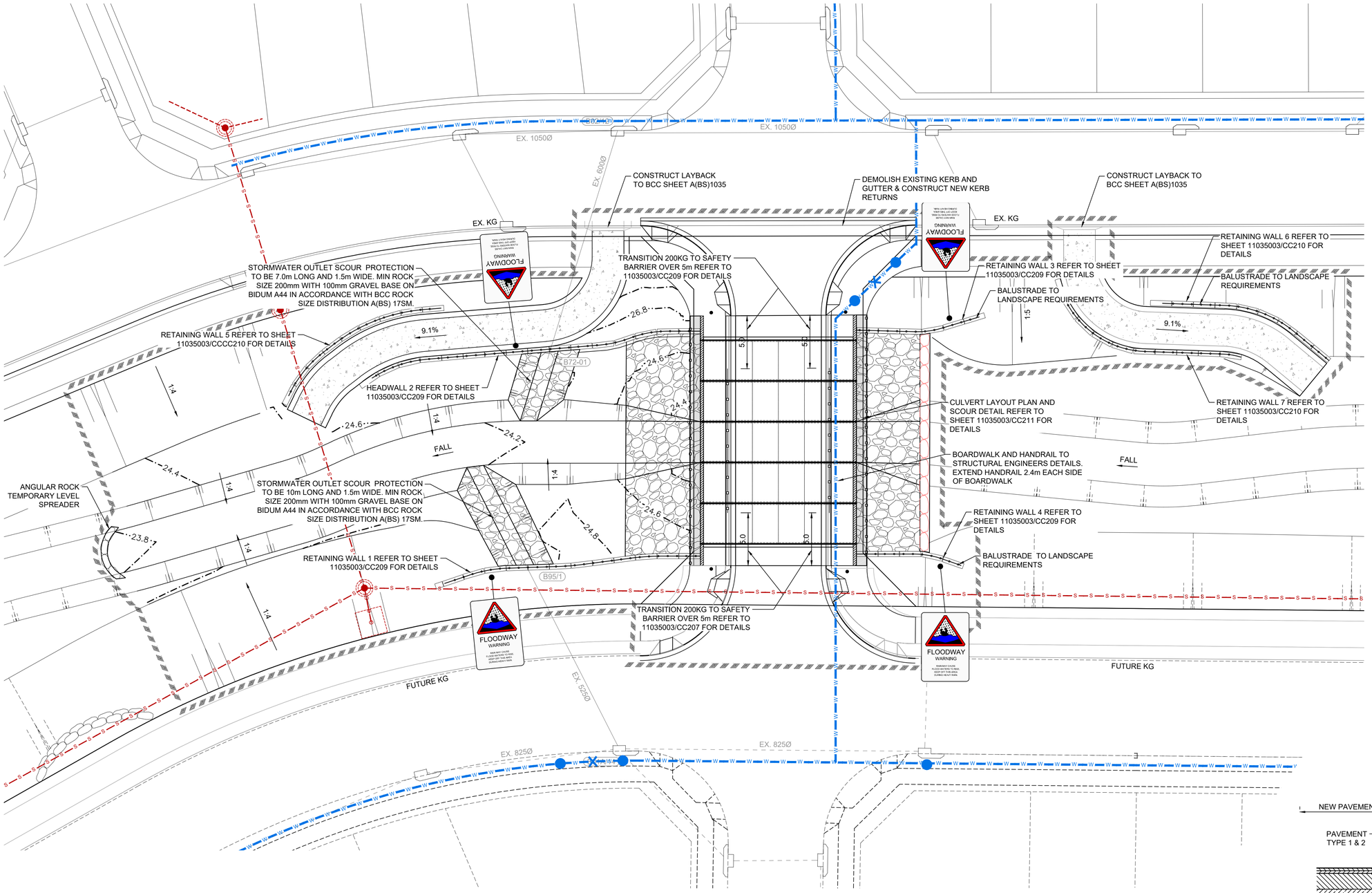
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

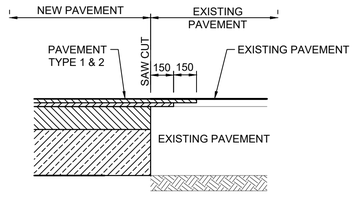
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.16
SETOUT PLAN

PLAN No: 11035005/CC203 B
FILE No: 11035005CC203
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:13:22 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC203.dwg





INTERFACE BETWEEN NEW PAVEMENT AND EXISTING FLEXIBLE PAVEMENTS

SCALE 1:20

NOTE:
REFER TO STRUCTURAL ENGINEER'S PLANS BY INHOUSE CONSULTING FOR
- CULVERT SLAB DETAILS
- HEADWALL DETAILS
- ROCK WALL DETAILS
- BOARDWALK DETAILS
- SAFETY BARRIER DETAILS

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
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CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

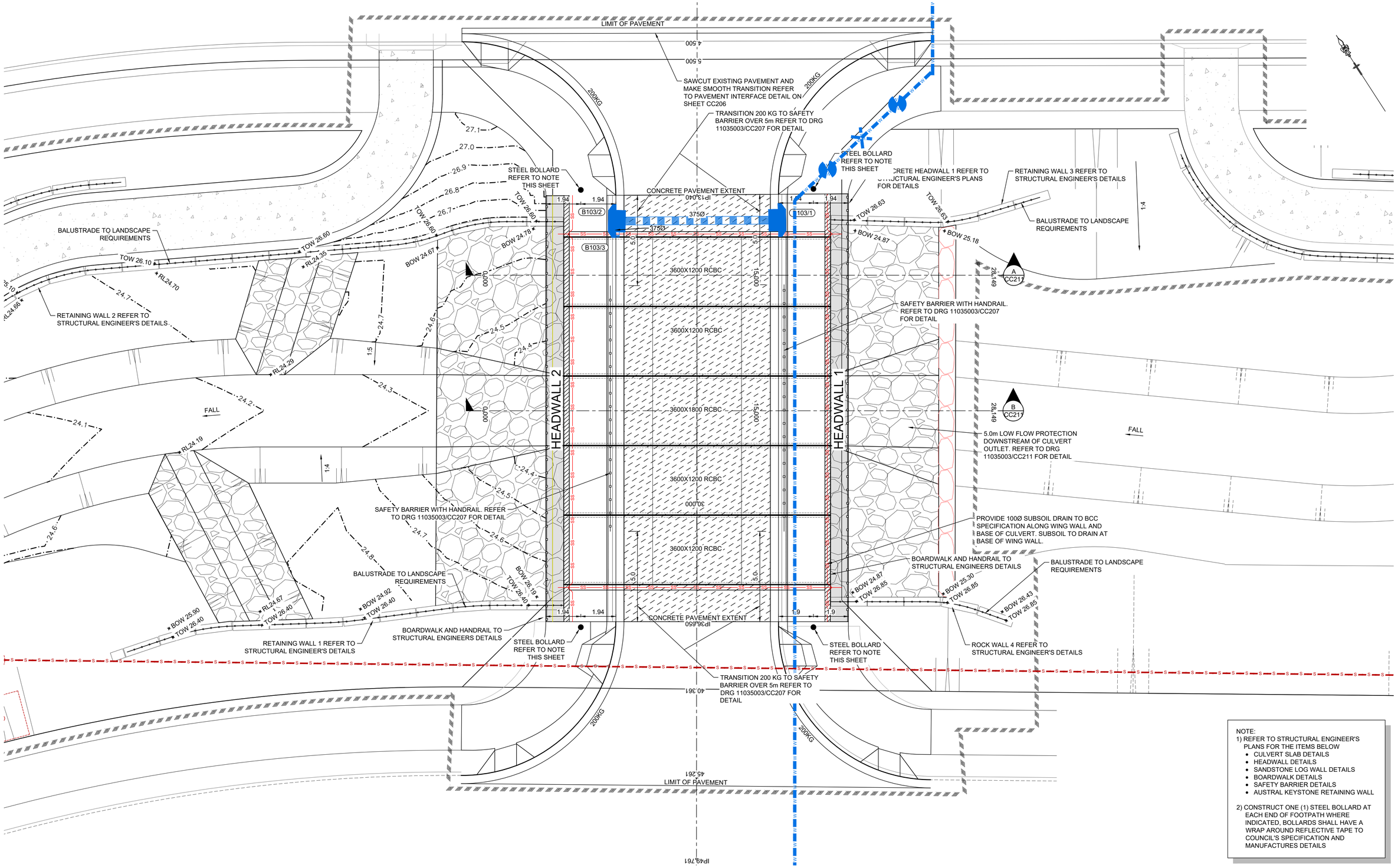
ELARA S94 WORKS
CULVERT CROSSING ML1.16
LAYOUT PLAN

PLAN No: 11035005/CC204 A

FILE No: 11035005CC204

SHEET SIZE: A1 ORIGINAL

Plotted: 27 November, 2018 10:13:49 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC204.dwg



NOTE:
1) REFER TO STRUCTURAL ENGINEER'S PLANS FOR THE ITEMS BELOW
- CULVERT SLAB DETAILS
- HEADWALL DETAILS
- SANDSTONE LOG WALL DETAILS
- BOARDWALK DETAILS
- SAFETY BARRIER DETAILS
- AUSTRAL KEYSTONE RETAINING WALL

2) CONSTRUCT ONE (1) STEEL BOLLARD AT EACH END OF FOOTPATH WHERE INDICATED, BOLLARDS SHALL HAVE A WRAP AROUND REFLECTIVE TAPE TO COUNCIL'S SPECIFICATION AND MANUFACTURES DETAILS

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.16
CULVERT DETAIL PLAN

PLAN No: 11035005/CC205 A
FILE No: 11035005CC205
SHEET SIZE: A1 ORIGINAL

AZIMUTH:
DATUM:
ORIGIN:

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

Plotted: 27 November , 2018 10:14:05 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC205.dwg

LEGEND

PAVEMENT DESIGN (REFER TO REPORT BY GEOTECH TESTING PTY LTD (Ref:8537/5-AA) DATED 03/07/2018

PAVEMENT NOTES - ROADS 622
CH.4.050 - CH.13.000 & CH.36.630 - CH.45.710
(2×10^5 ESA)

50mm MINIMUM THICKNESS (AC10) 2 x 25mm LAYERS
SINGLE COAT 7mm FLUSH SEAL
150mm DGB20 BASECOURSE COMPACTED TO MIN 98% M.M.D.D.
160mm CRUSHED SANDSTONE SUB BASECOURSE COMPACTED TO MIN 98% M.M.D.D.
300mm COMPACTED SUBGRADE MIN. REQUIREMENTS: 100% S.M.D.D. SUBGRADE TO BE CRUSHED SANDSTONE OR TREATED WITH 4% LIME

CONCRETE PAVEMENT CH13.000-CH36.630
180mm CONCRETE BASE (32MPa CONCRETE, DWELLED JOINTS AND SHRINKAGE REINFORCEMENT)
150mm CRUSHED SANDSTONE (100% STANDARD MAXIMUM DRY DENSITY AT OMC ± 2%)
REFER TO INHOUSE CONSULTING ENGINEERS PLANS FOR CONCRETE JOINTING DETAILS

FOOTPATH - TO COUNCIL SPECIFICATION
125mm THICK CONCRETE BASE 20MPa
CRUSHED SANDSTONE (100% STANDARD MAXIMUM DRY DENSITY AT OMC ±2%)
REFER TO STRUCTURAL ENGINEERS PLAN FOR CONCRETE PAVEMENT DETAILS & JOINTING

BOARDWALK
REFER TO STRUCTURAL ENGINEER'S SPECIFICATIONS

SCOUR PROTECTION
REFER TO SHEET CC211 FOR DETAILS

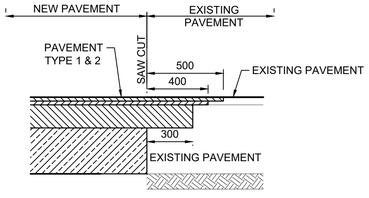
CONCRETE PAVEMENT
150mm CONCRETE BASE (21MPa CONCRETE, DOWELED JOINTS AND SHRINKAGE REINFORCEMENT) WITH SL32 MESH & 40 COVER
150mm CRUSHED SANDSTONE (100% STANDARD MAXIMUM DRY DENSITY AT OMC ± 2%)

LANDSCAPE AREA
TO LANDSCAPE ARCHITECT SPECIFCATION

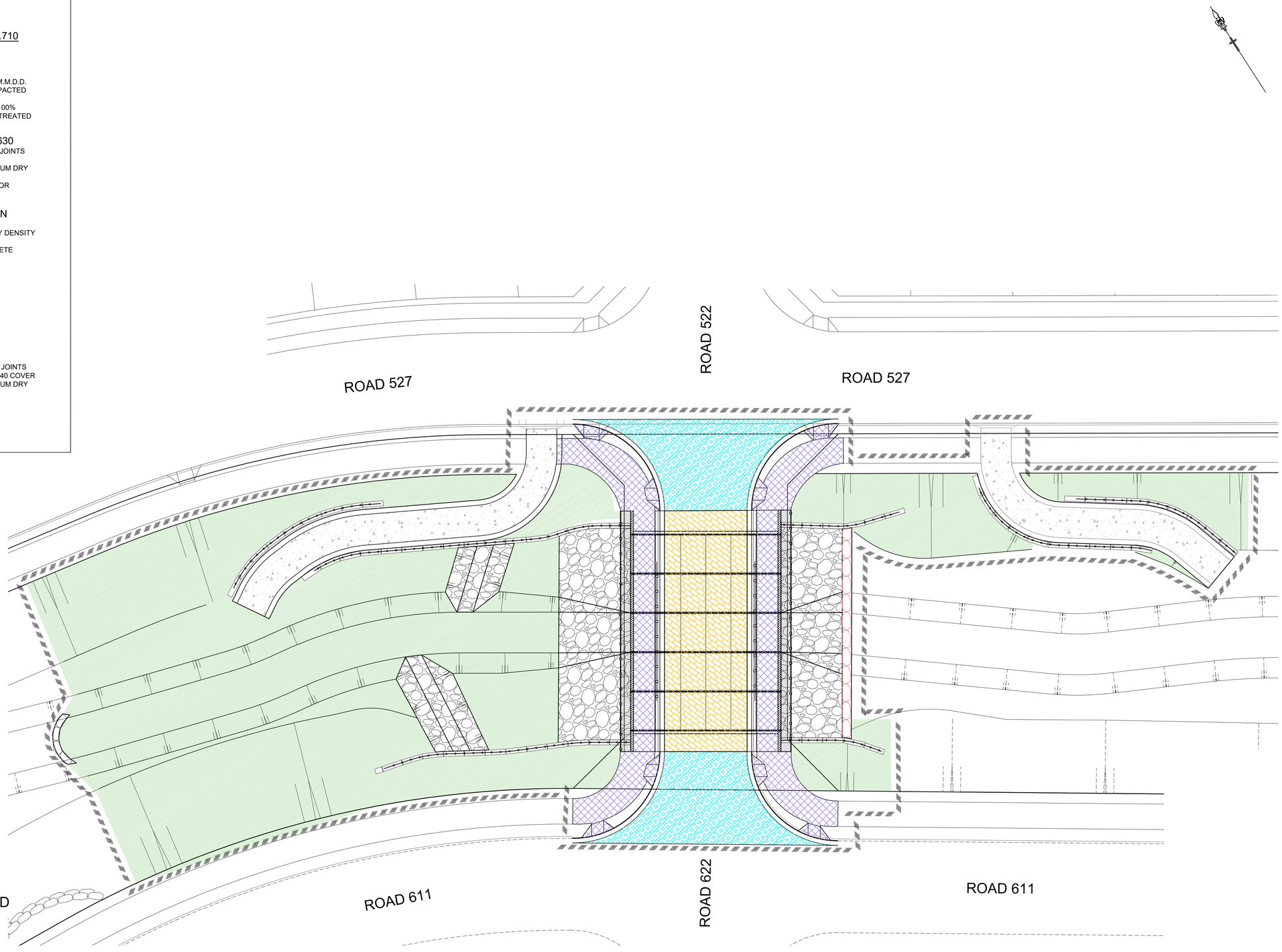
PAVEMENT NOTES:

- PAVEMENT DESIGN BASED ON CBR OF 7%.
- THE TOP 300mm OF SUBGRADE IS TO BE REPLACED WITH CRUSHED SANDSTONE WITH A MIN, CBR VALUE OF 30%. OR TREATED WITH 4% LIME.
- PAVEMENT DESIGN SUBJECT TO GEOTECHNICAL REPORT
- ALL PATH TO BE CONSTRUCTED TO BLACKTOWN CITY COUNCILS 'PATH PAVING POLICY 2009'

CONCRETE PAVEMENT SUBJECT TO STRUCTURAL DESIGN & CERTIFICATION.



INTERFACE BETWEEN NEW PAVEMENT AND EXISTING FLEXIBLE PAVEMENTS
SCALE 1:20



1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

B	HATCH AMENDED	PS	UF	AM	MS	27/11/18
A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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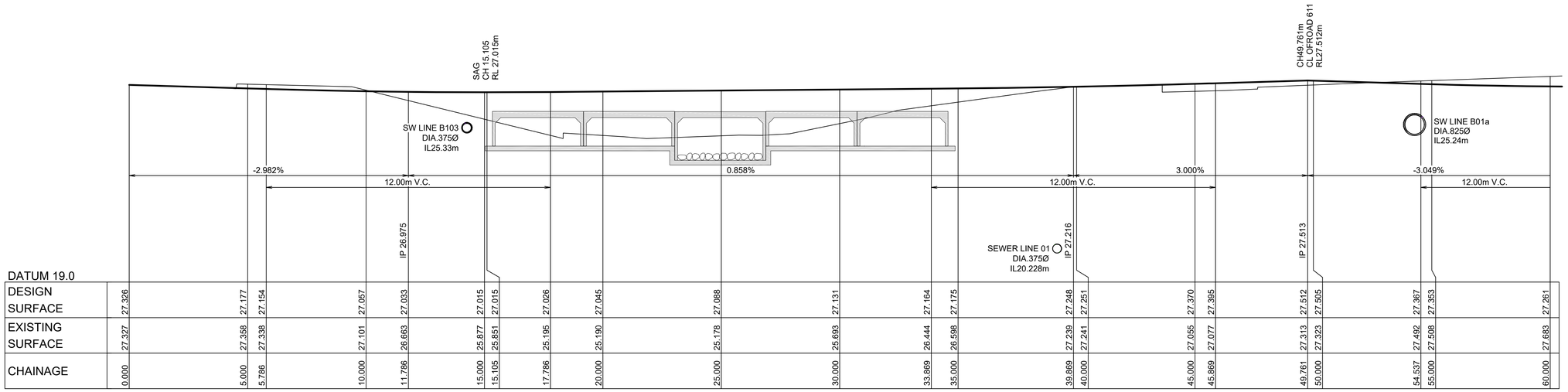
ELARA S94 WORKS
CULVERT CROSSING ML1.16
PAVEMENT PLAN

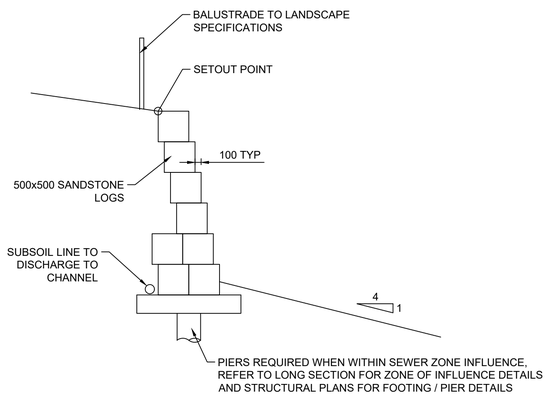
PLAN No: 11035005/CC206 B
FILE No: 11035005CC206
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:14:17 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC206.dwg



LONGITUDINAL SECTION ROAD 622

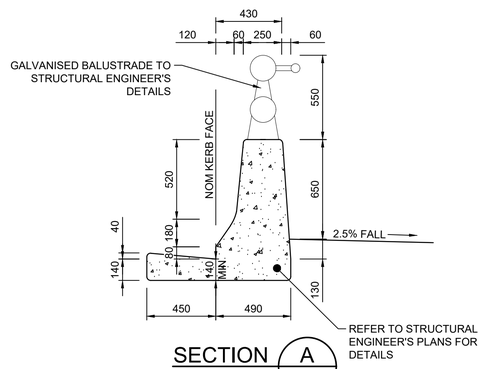
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



TYPICAL SECTION THROUGH SANDSTONE LOG RETAINING WALL

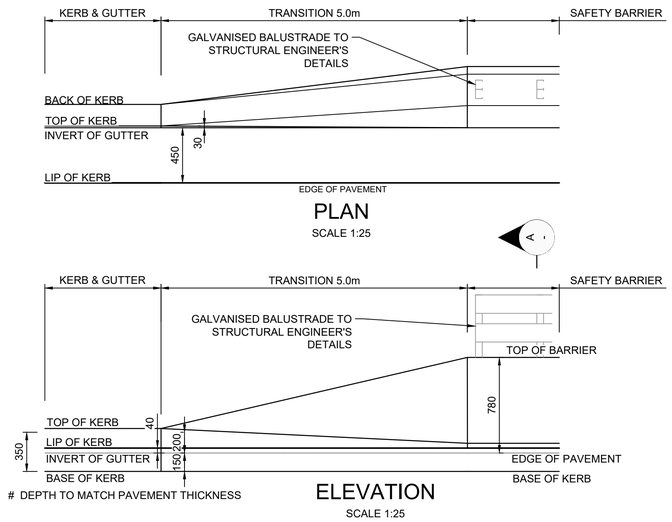
SCALE 1:50

CONCRETE BARRIER & STACKED ROCK RETAINING WALL ARE SUBJECT TO STRUCTURAL DESIGN AND APPROVAL



SECTION A

SCALE H 1:20
V 1:20



KERB & GUTTER TO SAFETY BARRIER

1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES

1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:25(AT A1) 500 0 500 1000 1500 2000 2500 MILLIMETRES

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

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	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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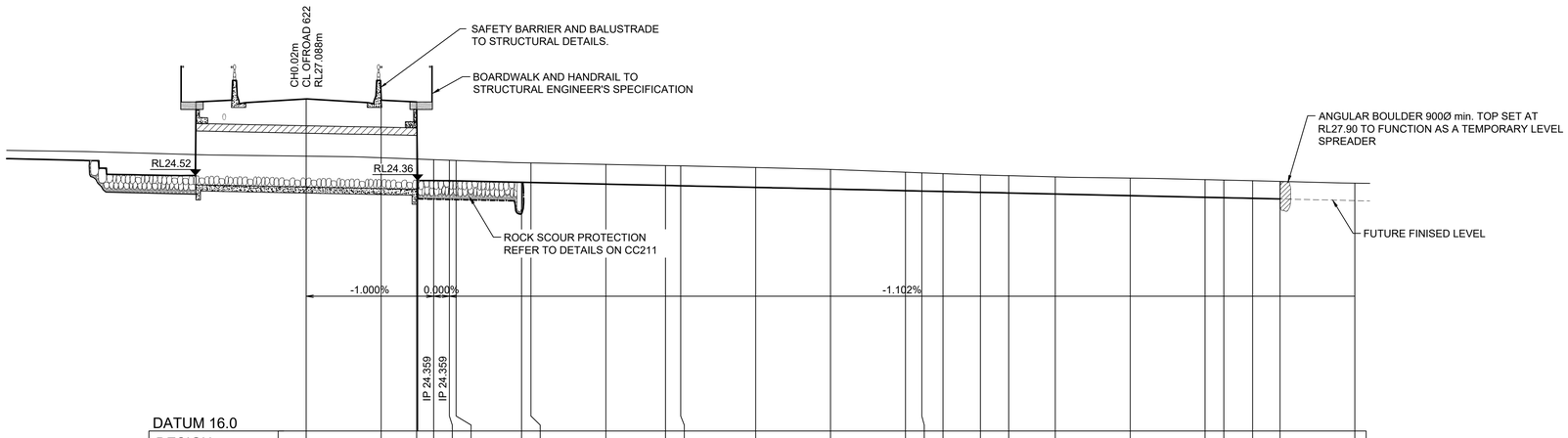
ELARA S94 WORKS
CULVERT CROSSING ML1.16
ROAD LONGITUDINAL SECTION AND KERB BARRIER DETAILS

PLAN No: 11035005/CC207 A
FILE No: 11035005CC207
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:14:29 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC207.dwg



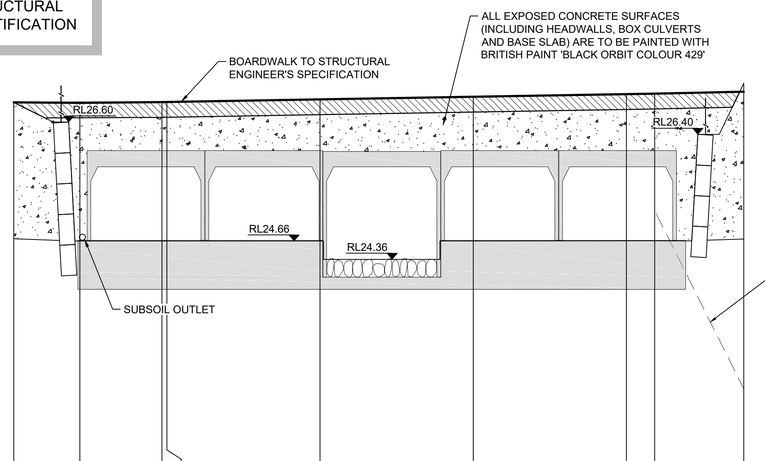
DATUM 16.0

DESIGN SURFACE	27.087	27.141	24.360	24.360	24.359	24.354	24.305	24.299	24.244	24.200	24.189	24.133	24.078	24.023	24.011	23.996	23.968	23.947	23.913	23.858	23.803	23.789	23.768	23.748	23.693
EXISTING SURFACE	25.177	25.123	25.060	25.041	25.033		24.952	24.902	24.863	24.853	24.796	24.733	24.643	24.622	24.595	24.552	24.526	24.483	24.445	24.395	24.380	24.357	24.333	24.274
CHAINAGE	0.000	5.000	7.370	8.501	9.553	10.000	14.370	15.000	20.000	23.986	25.000	30.000	35.000	40.000	41.091	42.508	45.000	46.893	50.000	55.000	60.000	61.254	63.170	65.000	70.000

LONGITUDINAL SECTION TC01 REACH 2

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100

SUBJECT TO STRUCTURAL DESIGN AND CERTIFICATION

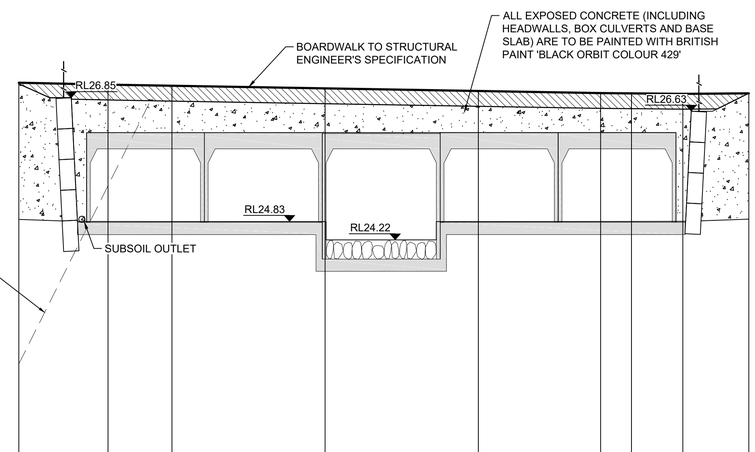


DATUM 21.0

WAE									
TOP OF WALL	26.922	26.915	26.926	26.928	26.971	27.014	27.056	27.064	27.097
CHANNEL SURFACE	26.921	24.660	24.660	24.660	24.660	24.660	24.662	24.662	27.233
CHAINAGE	0.000	2.158	4.839	5.000	10.000	15.000	20.000	20.922	23.834

HEADWALL 2

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50



DATUM 21.0

WAE									
TOP OF WALL	27.097	27.064	27.046	27.004	26.961	26.926	26.922	26.915	26.922
CHANNEL SURFACE	27.078	24.832	24.831	24.830	24.830	24.832	24.832	24.832	26.925
CHAINAGE	0.000	2.912	5.000	10.000	15.000	18.995	20.000	21.676	23.834

HEADWALL 1

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

1:100 (AT A1)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:50 (AT A1)
100 0 100 200 300 400 500
MILLIMETRES

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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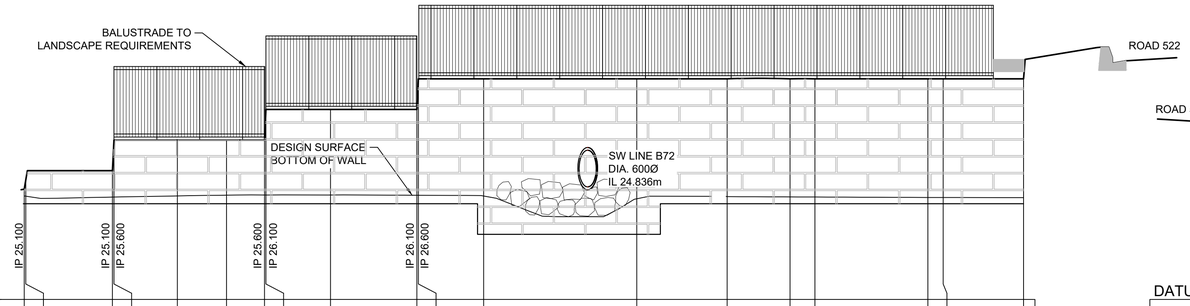
ELARA S94 WORKS
CULVERT CROSSING ML1.16
CULVERT HEADWALL SECTIONS

PLAN No: 11035005/CC208 A
FILE No: 11035005CC208
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:14:40 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC208.dwg

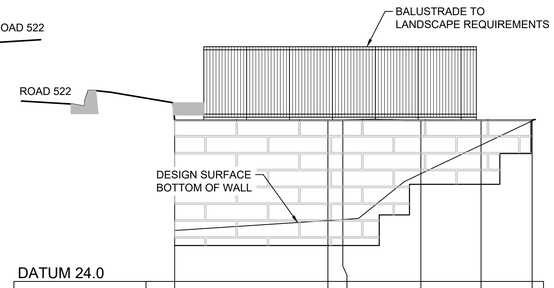


DATUM 23.0

WAE																						
TOP OF WALL	24.600	25.100	25.100	25.600	25.600	25.600	25.600	26.100	26.100	26.100	26.600	26.600	26.600	26.600	26.600	26.600	26.600	26.600	26.600	26.600	26.600	26.600
BOTTOM OF WALL	24.689	24.685	24.669	24.670	24.689	24.701	24.704	24.704	24.703	24.699	24.699	24.687	24.642	24.677	24.672	24.670	24.663	24.663	24.660			
CHAINAGE	0.000	0.050	2.879	2.929	5.000	6.603	7.843	7.893	10.000	12.819	12.869	15.000	20.000	22.949	25.000	25.816	29.501	30.000	32.625			

LONGITUDINAL SECTION RETAINING WALL 2

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

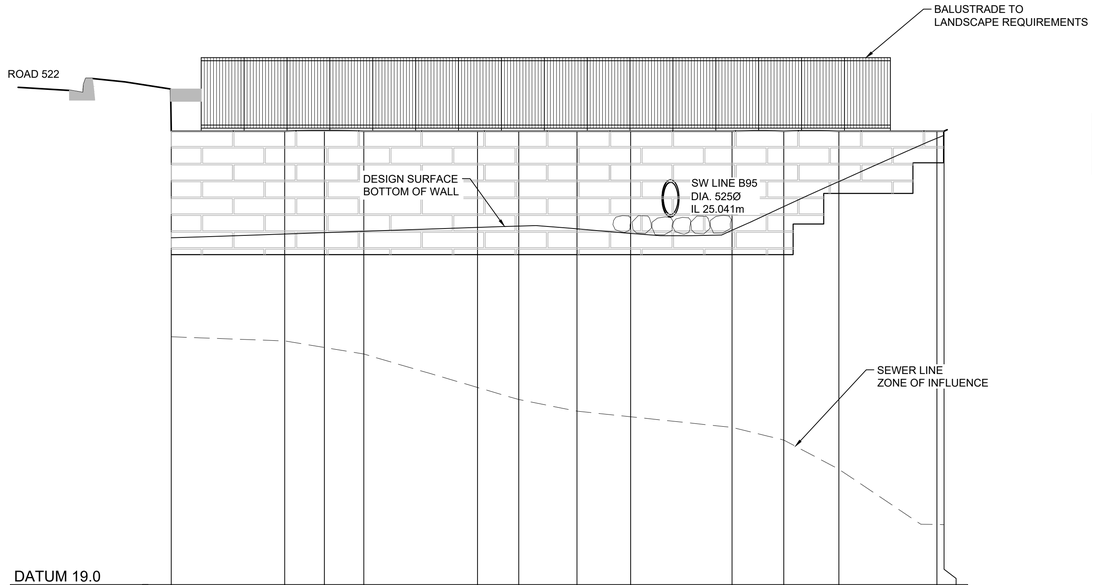


DATUM 24.0

WAE						
TOP OF WALL	26.630	26.630	26.630	26.630	26.630	26.630
BOTTOM OF WALL	24.830	24.993	25.008	25.757	26.224	26.620
CHAINAGE	0.000	5.000	5.488	8.037	10.000	11.668

LONGITUDINAL SECTION RETAINING WALL 3

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50



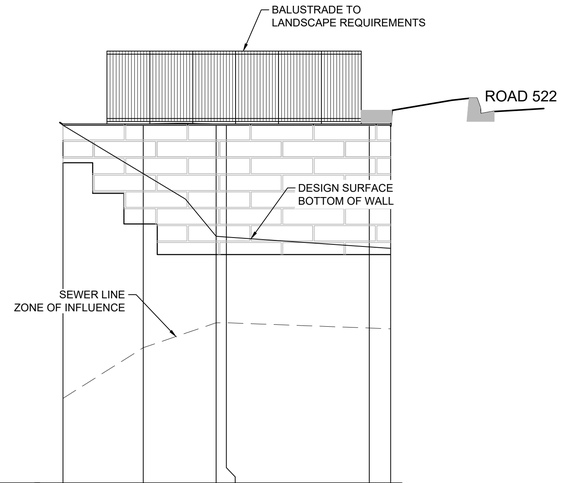
DATUM 19.0

WAE															
TOP OF WALL	26.400	26.400	26.400	26.400	26.400	26.400	26.400	26.400	26.400	26.400	26.400	26.400	26.400	26.400	26.400
BOTTOM OF WALL	24.660	24.721	24.743	24.766	24.829	24.851	24.806	24.730	24.782	25.171	25.577	26.285	26.333		
CHAINAGE	0.000	3.707	5.000	6.289	10.000	11.346	13.247	15.000	18.312	20.000	21.798	25.000	25.232		

LONGITUDINAL SECTION RETAINING WALL 1

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

SUBJECT TO STRUCTURAL
DESIGN AND CERTIFICATION



DATUM 21.0

WAE						
TOP OF WALL	26.850	26.850	26.850	26.850	26.850	26.850
BOTTOM OF WALL	26.840	26.049	25.027	25.014	24.854	24.830
CHAINAGE	0.000	2.624	5.000	5.338	10.000	10.698

LONGITUDINAL SECTION RETAINING WALL 4

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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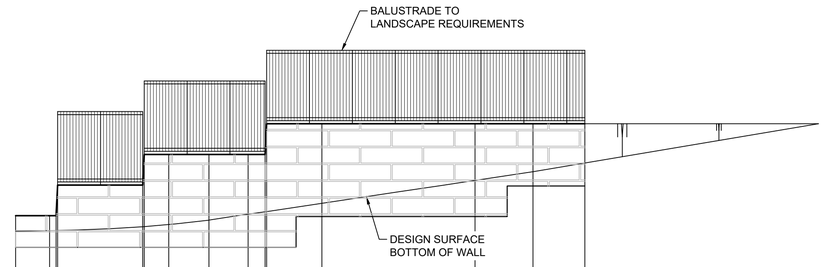
ISSUE FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.16
RETAINING WALL LONGITUDINAL SECTION
SHEET 1

PLAN No: 11035005/CC209 A
FILE No: 11035005CC209
SHEET SIZE: A1 ORIGINAL

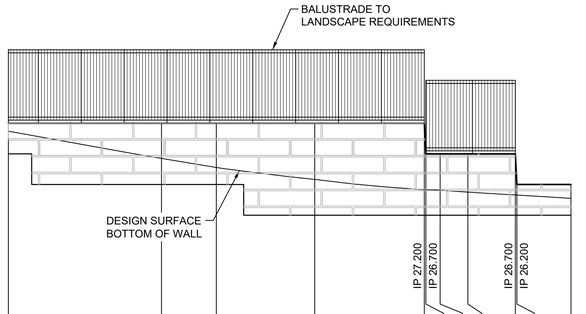
Plotted: 27 November , 2018 10:14:51 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC209.dwg



		IP 24.900	IP 25.400		IP 25.400	IP 25.900			IP 25.900	IP 26.400				
DATUM 22.0														
WAE														
TOP OF WALL	24.900	24.900	24.900	25.400	25.400	25.900	25.900	25.900	25.900	26.400	26.400	26.400	26.400	26.400
BOTTOM OF WALL	24.646	24.658	24.660	24.660	24.719	24.721	24.756	24.827	24.926	24.963	24.967	25.102	25.475	25.617	25.759
CHAINAGE	0.000	1.111	1.324	1.374	4.151	4.201	5.000	6.313	7.593	8.145	8.195	10.000	15.000	16.894	18.587

LONGITUDINAL SECTION RETAINING WALL 5

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

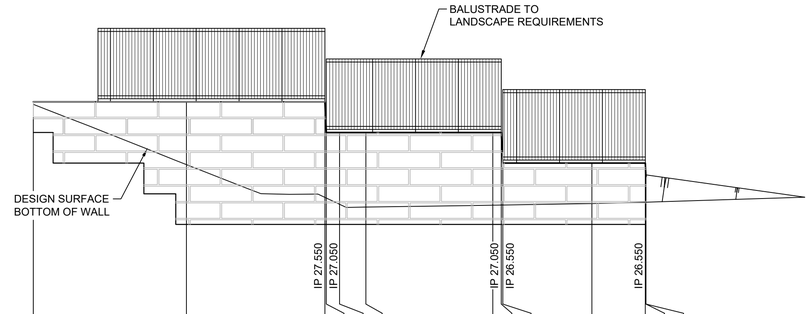


					IP 27.200	IP 26.700		IP 26.700	IP 26.200		
DATUM 24.0											
WAE											
TOP OF WALL	27.200	27.200	27.200	27.200	27.200	26.700	26.700	26.700	26.200	26.200	
BOTTOM OF WALL	27.071	26.626	26.477	26.283	26.117	26.116	26.107	26.077	26.030	26.028	25.975
CHAINAGE	0.000	5.000	6.790	10.000	13.578	13.628	14.094	15.000	16.551	16.601	18.368

LONGITUDINAL SECTION RETAINING WALL 6

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

SUBJECT TO STRUCTURAL
DESIGN AND CERTIFICATION



				IP 27.550	IP 27.050				IP 27.050	IP 26.550		IP 26.550	
DATUM 24.0													
WAE													
TOP OF WALL	27.550	27.550	27.550	27.550	27.050	27.050	27.050	27.050	27.050	26.550	26.550	26.550	26.357	26.330
BOTTOM OF WALL	27.510	26.526	25.991	25.979	25.877	25.833	25.862	25.865	25.865	25.890	25.911	25.912	25.912
CHAINAGE	0.000	5.000	9.518	9.568	10.000	10.858	15.000	15.278	15.328	18.235	19.981	20.000	20.003

LONGITUDINAL SECTION RETAINING WALL 7

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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CLIENT: Stockland

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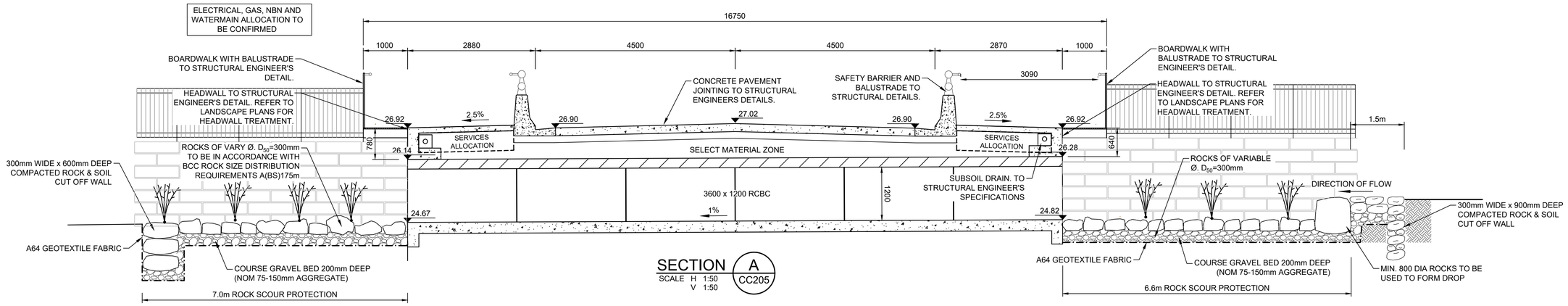
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.16
RETAINING WALL LONGITUDINAL SECTION
SHEET 2

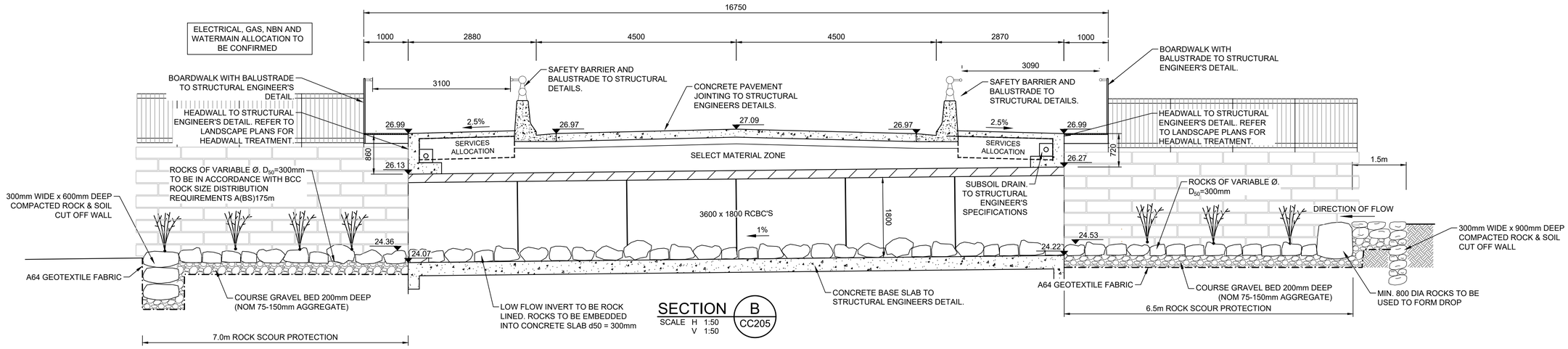
PLAN No: 11035005/CC210 A
FILE No: 11035005CC210
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:15:01 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC210.dwg



SECTION A CC205
SCALE H 1:50
V 1:50

SUBJECT TO STRUCTURAL DESIGN AND CERTIFICATION



SECTION B CC205
SCALE H 1:50
V 1:50

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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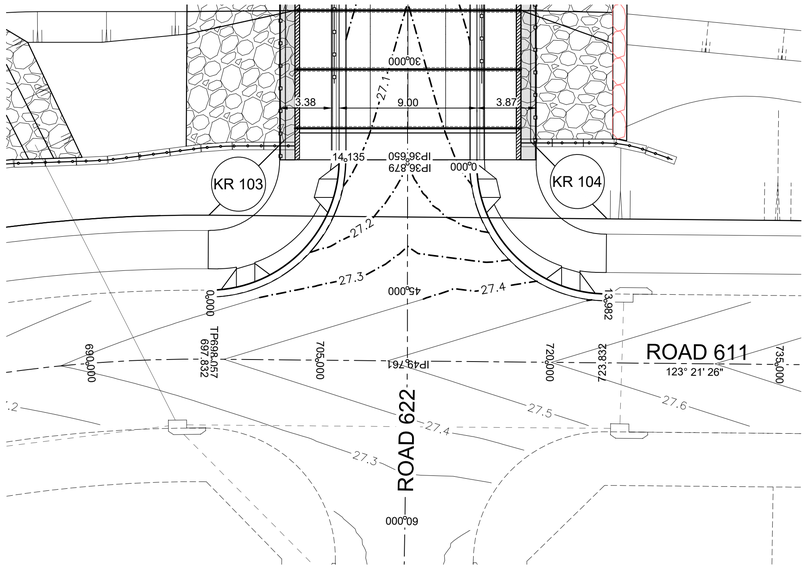
ISSUED FOR CONSTRUCTION APPROVAL

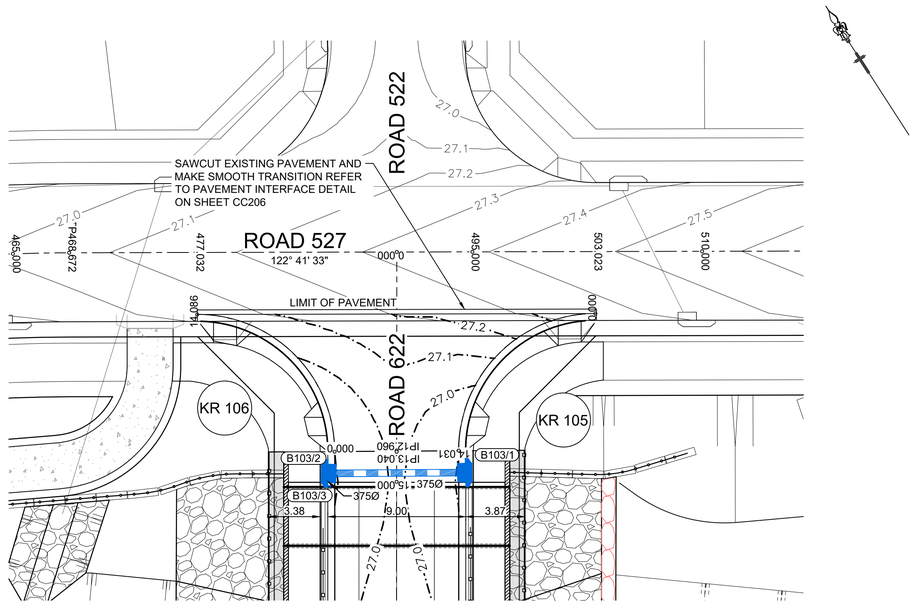
ELARA S94 WORKS
CULVERT CROSSING ML1.16
CULVERT SECTIONS

PLAN No: 11035005/CC211 A
FILE No: 11035005CC211
SHEET SIZE: A1 ORIGINAL

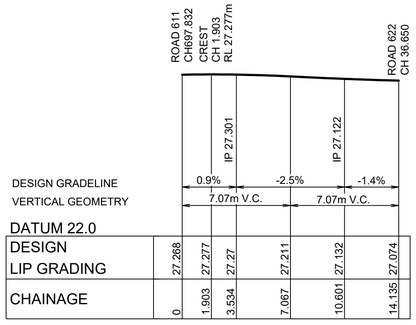
Plotted: 27 November , 2018 10:15:12 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC211.dwg



KERB RETURN PLAN
SCALE 1:200

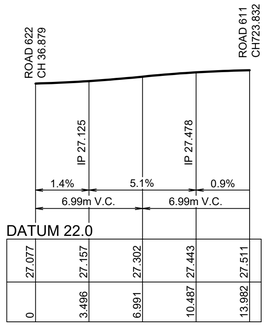


KERB RETURN PLAN
SCALE 1:200



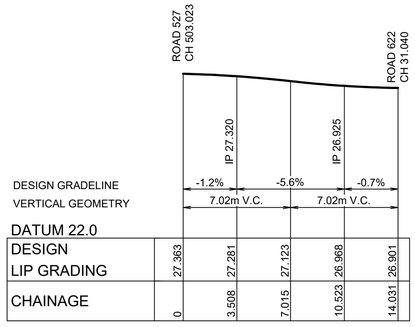
KR 103

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100



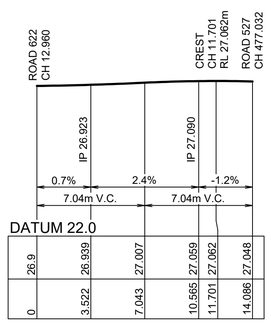
KR 104

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100



KR 105

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100



KR 106

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100

KR 103					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297428.17	6268468.88	123°21'26.16"		
7.07	297435.71	6268463.92		-8.95	14.13
14.13	297440.6	6268471.5	32°52'10.67"		

KR 104					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297447.29	6268466.92	212°52'10.67"		
6.99	297442.47	6268459.46		-8.95	13.98
13.98	297449.88	6268454.58	123°21'26.16"		

KR 105					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297472.62	6268489.67	302°41'32.76"		
7.02	297465.11	6268494.49		-8.95	14.03
14.03	297460.26	6268487	212°52'10.67"		

KR 106					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297453.42	6268491.33	32°52'10.67"		
7.04	297458.29	6268498.87		-8.95	14.09
14.09	297450.74	6268503.72	302°41'32.76"		

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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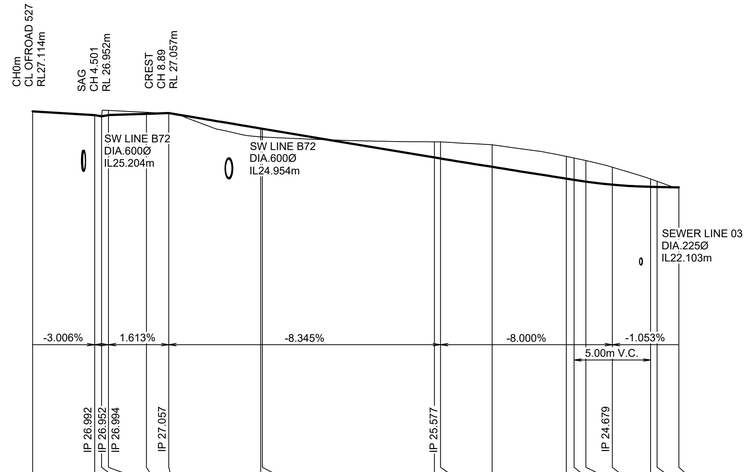
ELARA S94 WORKS
CULVERT CROSSING ML1.16
KERB RETURN PLAN

PLAN No: 11035005/CC212 A
FILE No: 11035005CC212
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:15:51 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC212.dwg

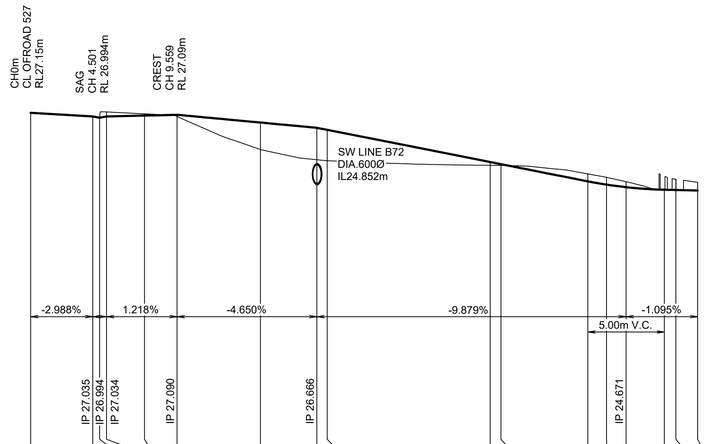


DATUM 15.0

DESIGN SURFACE	27.114	26.992	26.952	26.994	27.034	27.057	26.557	26.548	25.610	25.577	25.307	24.920	24.879	24.822	24.723	24.653	24.649	24.634
EXISTING SURFACE	27.114	26.992	26.957	27.146	27.084	27.045	26.280	26.278	26.122	26.120	26.027	25.846	25.592	25.510	25.300	24.908	24.833	24.633
CHAINAGE	0.000	4.050	4.501	4.948	7.429	8.890	14.886	15.000	26.232	26.633	30.000	34.844	35.350	36.124	37.850	40.350	40.769	42.193

LONGITUDINAL SECTION ACCESS 2

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100

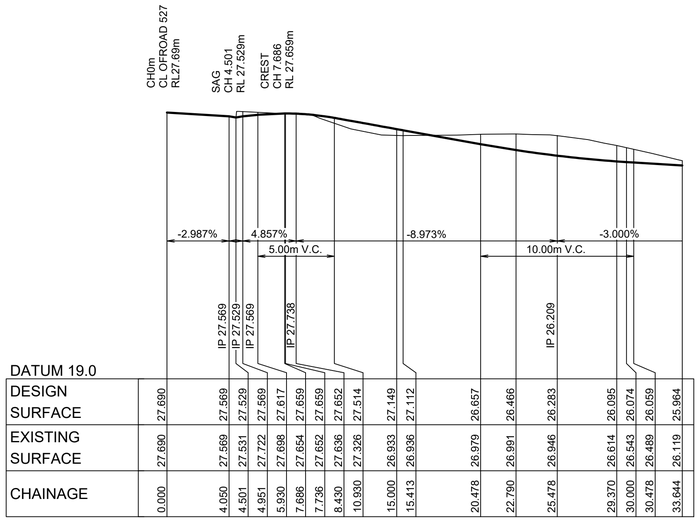


DATUM 16.0

DESIGN SURFACE	27.156	27.035	26.994	27.034	27.064	27.087	26.837	26.662	26.599	25.548	25.478	24.918	24.811	24.726	24.644	24.636	24.620
EXISTING SURFACE	27.150	27.028	26.993	27.182	27.120	27.035	25.957	25.613	25.589	25.442	25.440	25.173	25.049	24.907	24.660	24.987	24.885
CHAINAGE	0.000	4.050	4.501	4.951	7.429	9.559	15.000	18.683	19.360	30.000	30.706	36.376	37.596	38.876	41.376	42.127	43.551

LONGITUDINAL SECTION ACCESS 2a

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100

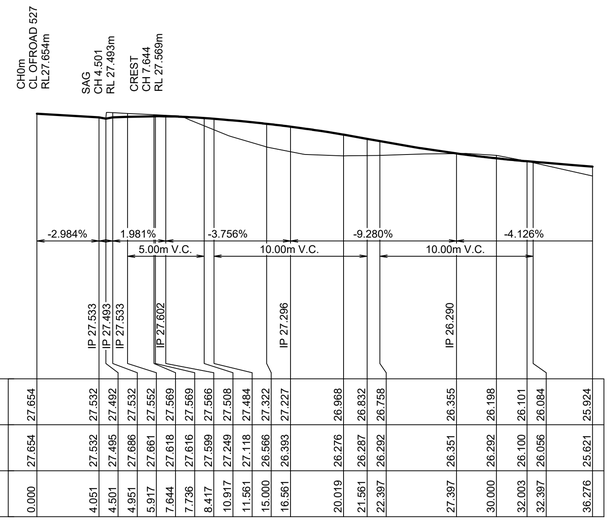


DATUM 19.0

DESIGN SURFACE	27.690	27.569	27.529	27.569	27.617	27.659	27.652	27.514	27.149	27.112	26.657	26.466	26.283	26.095	26.074	26.059	25.964
EXISTING SURFACE	27.690	27.569	27.531	27.722	27.698	27.654	27.636	27.326	26.933	26.936	26.979	26.991	26.946	26.614	26.543	26.489	26.119
CHAINAGE	0.000	4.050	4.501	4.951	5.930	7.686	8.430	10.930	15.000	15.413	20.478	22.790	25.478	29.370	30.000	30.478	33.644

LONGITUDINAL SECTION REACH 1 ACCESS 1

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100



DATUM 19.0

DESIGN SURFACE	27.654	27.532	27.492	27.532	27.552	27.569	27.569	27.566	27.508	27.484	27.322	27.227	26.968	26.832	26.758	26.355	26.198	26.101	26.084	25.924
EXISTING SURFACE	27.654	27.532	27.495	27.686	27.661	27.618	27.616	27.599	27.249	27.118	26.566	26.393	26.276	26.287	26.292	26.351	26.292	26.100	26.056	25.621
CHAINAGE	0.000	4.051	4.501	4.951	5.917	7.644	7.736	8.417	10.917	11.561	15.000	16.561	20.019	21.561	22.397	27.397	30.000	32.003	32.397	36.276

LONGITUDINAL SECTION REACH 1 ACCESS 1a

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:200 (AT A1) 4 2 0 4 8 12 16 20 METRES

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
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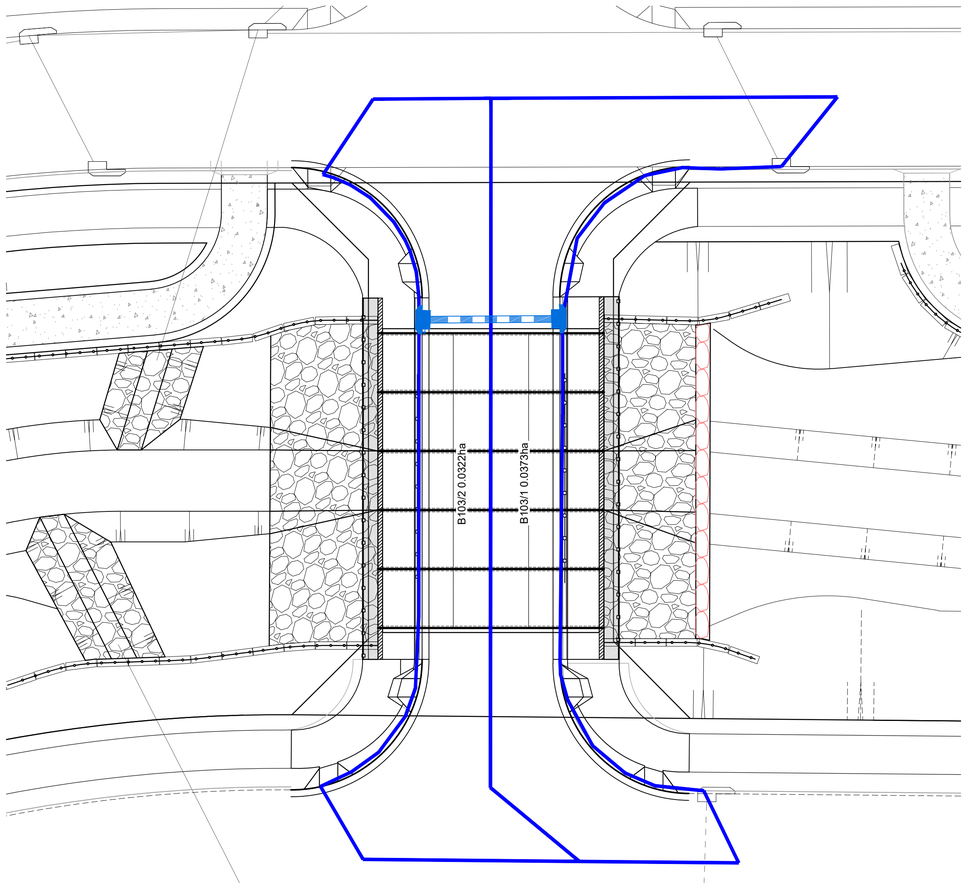
ELARA S94 WORKS
CULVERT CROSSING ML1.16
ACCESS RAMP LONGITUDINAL SECTIONS

PLAN No: 11035005/CC213 A

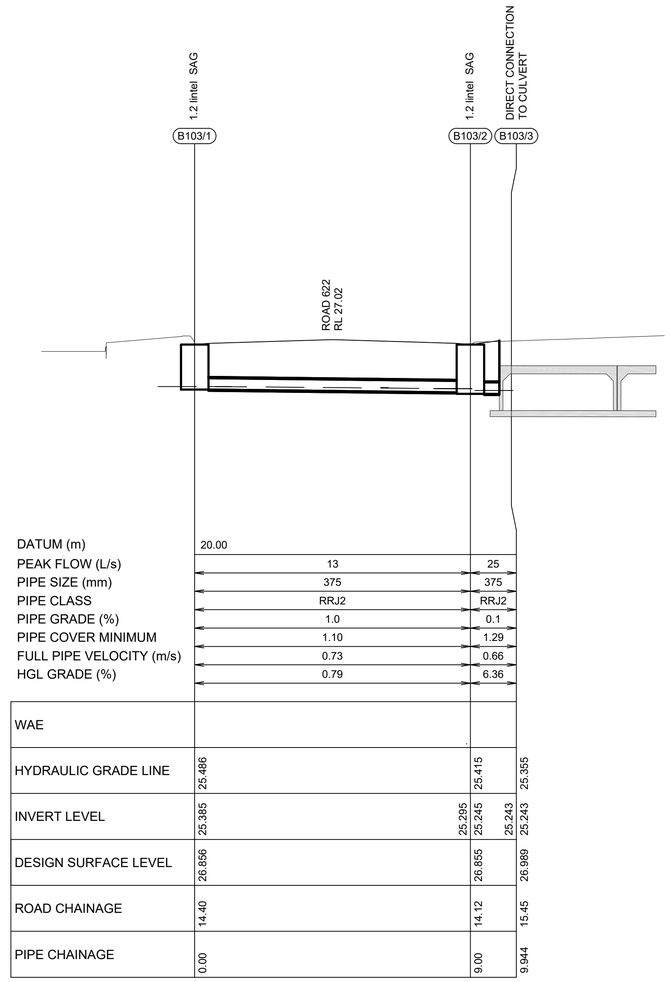
FILE No: 11035005CC213

SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:16:02 AM File Name : J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC213.dwg



PLAN
SCALE 1:200



LINE B103
SCALE 1:100

PIT SCHEDULE					
PIT	PIT	PIT	PIT	PIT	COMMENTS
NAME	TYPE	EASTING	NORTHING	DEPTH	
(-)	(-)	(m)	(m)	(m)	
B103/1	GSIP 600x600 SAG	297459.863	6268485.55	1.47	
B103/2	GSIP 600x600 SAG	297452.244	6268490.34	1.61	
B103/3	D.C	297451.709	6268489.56	1.746	DIRECT CONNECTION TO RCBC
BP31/1	BYPASS NODE	297448.27	6268484.19	1.497	

DESIGN STORM 1:10yr ARI HYDROLOGIC RESULTS																			
PIT	PIT	CATCHMENT	PERCENT	Tc	Tc	CRITICAL	APPROACH	CAPTURED	UNCAPTURED	GRATE	ROAD	ROAD	BYPASS	BYPASS CHANNEL					COMMENTS
NAME	TYPE	AREA	IMPERVIOUS	IMP	PERV	STORM	FLOW	FLOW	FLOW	DEPTH	GRADE	CROSSFALL	PIT	FLOW	U/S FLOW WIDTH	U/S VxD	D/S FLOW WIDTH	D/S VxD	
(-)	(-)	(Ha)	(%)	(min)	(min)	(min)	(L/s)	(L/s)	(L/s)	(mm)	(%)	(%)	(-)	(L/s)	(m)	(m/s^2)	(m)	(m/s^2)	(-)
B103/1	GSIP 600x600 SAG	0.037	95	5	5		13	13	0	22	0.4	3	B103/2	0					
B103/2	GSIP 600x600 SAG		0	5	5		12	12	0	21	0.4	3	LOST	0					
B103/3	D.C						0	0	0	0									
BP31/1	BYPASS NODE	0.032	85	5	5	15	12	0	0	64	0.9	3	B103/2	12	1.27	0.03	1.15	0.03	

DESIGN STORM 1:10yr ARI HYDRAULIC RESULTS																				
PIPE	PIPE	PIPE	PIPE	PIPE	CRITICAL	PEAK	CAPACITY	PEAK	PIPE	PIPE	PIPE	U/S PIT	D/S PIT	PIT LOSS	WSE LOSS	U/S PIPE	D/S PIPE	HGL	MINIMUM	MINIMUM	COMMENTS
NAME	DIAMETER	TYPE	LENGTH	GRADE	STORM	FLOW	RATIO	VELOCITY	U/S IL	D/S IL	D/S DROP	Ku	Kw	(Ku.V'head)	(Kw.V'head)	HGL	HGL	GRADE	COVER	FREEBOARD	
(-)	(mm)	(-)	(m)	(%)	(min)	(L/s)	(-)	(m/s)	(m)	(m)	(m)	(-)	(-)	(m)	(m)	(m)	(m)	(%)	(m)	(m)	
B103/1 to B103/2	375	RRJ2	9	1	15	13	0.07	0.57	25.385	25.295	0.05	4.5	4.5	0.08	0.08	25.486	25.415	0.79	1.1	1.37	
B103/2 to B103/3	375	RRJ2	0.94	0.31	25	25	0.24	0.66	25.245	25.243		2.99	3.16	0.05	0.06	25.415	25.355	6.36	1.26	1.44	

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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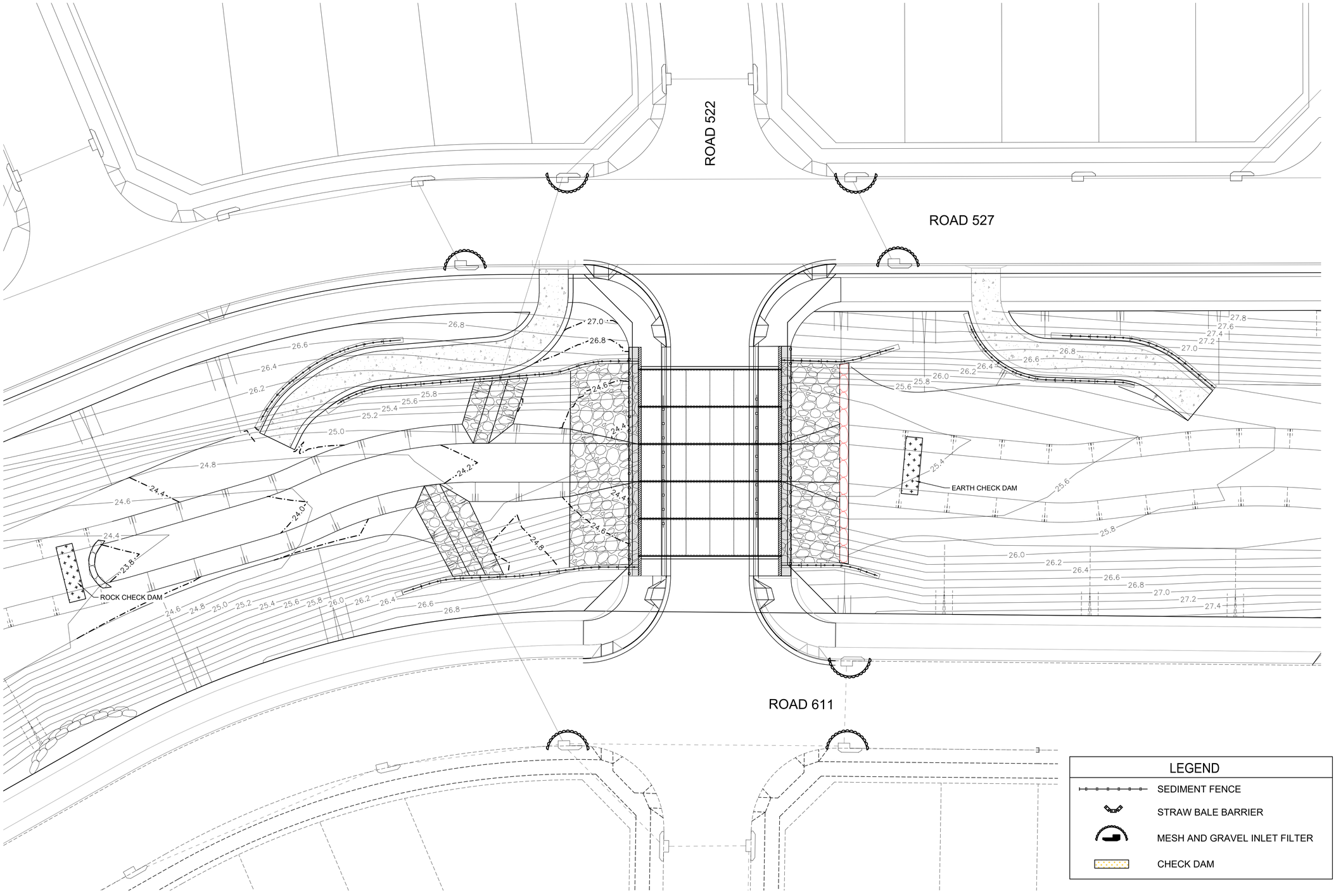
ISSUE FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.16
STORMWATER DETAILS

PLAN No: 11035005/CC214 A
FILE No: 11035005CC214
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:16:23 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC214.dwg



1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
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ELARA S94 WORKS
CULVERT CROSSING ML1.16
SOIL & WATER MANEGEMENT PLAN

PLAN No: 11035005/CC215 A
FILE No: 11035005CC215
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:16:43 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC215.dwg

SOIL AND WATER MANAGEMENT NOTES

GENERAL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE BLACKTOWN CITY COUNCIL.

2. BULK EARHWORKS ARE TO BE UNDERTAKEN IN STAGES. THE CONTRACTOR IS TO PREPARE A STAGING PLAN WHICH IS TO BE SUBMITTED TO THE PCA PRIOR TO THE COMMENCEMENT OF WORKS.

3. TOPSOIL FROM ALL AREAS TO BE DISTURBED SHALL BE STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN THOSE AREAS.

4. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILIZED AS EARLY AS POSSIBLE DURING DEVELOPMENT.

5. ALL TAIL-OUT DRAINS SHALL BE COUCH GRASSED AND TRAPEZOIDAL IN SECTION. STRAW BALES SHALL BE PLACED AS A SEDIMENT CONTROL DEVICE WHERE REQUIRED.

6. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING DEVELOPMENT CONFINING ACCESS WHERE POSSIBLE TO PROPOSED OR EXISTING ROAD ALIGNMENTS. AREAS TO BE LEFT UNDISTURBED SHALL BE MARKED OFF.

7. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.

8. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM 60% FULL OF SOLID MATERIALS, INCLUDING DURING THE MAINTENANCE PERIOD.

9. THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.

10. CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" ("THE BLUE BOOK").

11. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.

12. THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (PREF 2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES - WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDENTIFIED WITH BARRIER FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 10m	THE SITE MANAGER SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES. WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION.

NOTE:
WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED - ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE C-FACTORS BELOW 0.05 FROM 1st JANUARY TO 15th MAY USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

13. GENERALLY WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE AND WILL BE DETAILED IN THE CONSTRUCTION CERTIFICATE DRAWINGS. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:-

    a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE CC PLANS AND TO DETAIL(SD) 6-7.
    b. CONSTRUCT STABILISED SITE ACCESS AS SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-7.
    c. CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-3.
    d. PROVIDE TEMPORARY ACCESS TO THE SEDIMENT BASIN(S)AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6-7 OR BARRIER FENCING AND EARTH BANKS (SD) 5-2.
    e. PLACE SEDIMENT FENCING (SD) 6-7 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.
    f. CONSTRUCT SEDIMENT BASIN(S) GENERALLY IN ACCORDANCE WITH (SD) 6-4
    g. STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASIN(S) AS SOON AS FINAL LEVELS ARE ESTABLISHED
    h. CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE CC PLANS OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD) 4-1.
    i. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS.
    j. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
    k. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

14. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE

15. EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER THAN:-

    a. 2(h) - 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
    b. 2.5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
    c. 3(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
    d. 4(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
    e. 5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
    f. 6(h) - 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

    SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

16. PROTECTION FROM EROSIVE FORCES SHALL BE UNDERTAKEN ON ALL LANDS TO MEET THE REQUIREMENTS OF TABLE J3-3 "MAXIMUM ACCEPTABLE C-FACTORS AT NOMINATED TIMES DURING WORKS" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION"

17. TEMPORARY GROUND COVER IN SHEET FLOW AREAS IS TO BE IN ACCORDANCE WITH TABLE J3-4 "PLANT SPECIES FOR GROUND COVER" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" WHERE PRACTICAL FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATED AREAS

18. WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO BE SCHEDULED SO THAT THE TIME FROM STARTING LAND DISTURBANCE ACTIVITIES TO STABILISATION IS A DURATION OF LESS THAN 6 MONTHS - THIS MEANS ACHIEVING A C-FACTOR OF LESS THAN 0.1 AND SETTING IN MOTION A PROGRAM THAT ENSURES THAT IT DROPS PERMANENTLY, (BY VEGETATION, PAVING, ARMOURING etc.) TO LESS THAN 0.05 WITHIN A FURTHER 60 DAYS. LOCAL WATER RESTRICTIONS PERMITTING, LANDS THAT HAVE BEEN NEWLY PLANTED WITH GRASS SPECIES SHALL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER HAS BEEN ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER SHALL BE APPLIED AS NECESSARY IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE VEGETATIVE PROTECTION. NOTWITHSTANDING THIS SCHEDULE WORKS SO THAT THE DURATION FROM THE CONCLUSION OF LAND SHAPING TO THE COMPLETION OF FINAL STABILISATION IS LESS THAN 20 WORKING DAYS.

19. SEDIMENT FENCES (SD) 6-7 SHALL:-

    a. BE INSTALLED WHERE SHOWN ON THE CC PLANS AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
    b. HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m, AND A STORAGE DEPTH OF AT LEAST 0.6m.
    c. PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHMENT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 40litres/sec IN A MAX. 20yr Tc DISCHARGE.

20. STOCKPILES (SD) 4-1 SHALL BE LOCATED AS SHOWN ON THE CC PLANS AND AT THE DISCRETION OF THE SITE SUPERINTENDENT.

21. DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDANTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.

22. NOTWITHSTANDING NOTE 21 STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.

23. THE SEDIMENT RETENTION BASINS (SD) 6-4 SHALL:-

    a. BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
    b. BE FLOCCULATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
    c. HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.

24. STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:-

    a. LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
    b. THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
    c. THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT
    d. DISCHARGING SEDIMENT FROM THE SITE.

25. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR.

26. WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD) 6-8 & 6-9.

27. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED.

28. ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

STOCKPILE NOTES:

1. SPOIL AN TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREAS WHERE WATER MAY CONCENTRATE.

2. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 14 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.

3. FOLLOWING CONSTRUCTION, TOPSOIL SHALL BE RESPREAD TO A MINIMUM DEPTH OF 100mm ON THE BARE SOIL SURFACES AND REVEGETATE.

4. PLASTIC SHEETING MUST BE PLACED OVER THE STOCKPILE TO MINIMISE WIND BLOWN DUST.

SEDIMENTATION CONTROL DEVICES:

1. ALL STRAW BALES SHALL BE BOUND WITH WIRE. STRAW BALES SHALL BE PLACED END TO END IN A SINGLE ROW AND EMBEDDED INTO THE SOIL TO A DEPTH OF 100mm. EACH BALE SHALL BE SECURELY ANCHORED WITH TWO STEEL STAKES DRIVEN 450mm INTO THE GROUND AND LOCKED ON THE BALE CENTRELINE.

2. SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG IT'S LOWER EDGE.

3. PROVIDE STRIP OF TURF MIN. 300mm WIDE BEHIND KERB + 1m WIDE AROUND ALL SURFACE INLET PITS

SITE INSPECTION AND MAINTENANCE:

1. A SELF-AUDITING PROGRAM SHALL BE ESTABLISHED BASED ON A CHECK SHEET. A SITE INSPECTION USING THE CHECK SHEET SHALL BE MADE BY THE SITE MANAGER-:

    a. AT LEAST WEEKLY
    b. IMMEDIATELY BEFORE SITE CLOSURE
    c. IMMEDIATELY FOLLOWING RAINFALL EVENTS IN EXCESS OF 5mm IN ANY 24hr PERIOD.

    THE SELF AUDIT SHALL INCLUDE:-

    a. RECORDING THE CONDITION OF EVERY 'BEST MANAGEMENT PRACTICE' EMPLOYED
    b. RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH 'BEST MANAGEMENT PRACTICE'
    c. RECORDING THE VOLUMES OF SEDIMENT REMOVED FROM SEDIMENT RETENTION SYSTEMS WHERE APPLICABLE
    d. RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
    e. FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER FOR THEIR INFORMATION.

2. IN ADDITION A SUITABLY QUALIFIED PERSON SHALL BE RESPONSIBLE FOR OVERSEEING THE INSTALLATION AND MAINTENANCE OF ALL SOIL AND WATER MANAGEMENT WORKS ON THE SITE. THE PERSON SHALL BE REQUIRED TO SPEND A MINIMUM OF:-

    a. 2hrs ONSITE EACH FORTNIGHT UP UNTIL COMPLETION OF ROAD AND DRAINAGE WORKS AND/OR THE COMMISSIONING OF SEDIMENT BASIN(S)/WATER QUALITY CONTROL FACILITIES, AND DURING THE DECOMMISSIONING OF SAME AND/OR FINAL SITE STABILISATION. TO PROVIDE A SHORT MONTHLY WRITTEN REPORT.
    b. ONE HOUR ONSITE EACH 2 MONTHS DURING THAT PHASE WHERE THE DEVELOPERS RESPONSIBILITIES ARE LIMITED TO MAINTENANCE OF THE SDS DEVICES AND/OR SEDIMENT BASINS (ie DURING THE STAGE WHEN BUILDING WORKS CAN BE UNDERTAKEN) TO PROVIDE A SHORT WRITTEN REPORT EACH 4 MONTHS

    THE RESPONSIBLE PERSON SHALL ENSURE THAT:-

    a. THIS PLAN IS BEING IMPLEMENTED CORRECTLY
    b. REPAIRS ARE BEING UNDERTAKEN AS REQUIRED
    c. ESSENTIAL MODIFICATIONS TO THIS PLAN ARE BEING MADE IF AND WHEN NECESSARY EACH REPORT SHALL CERTIFY THAT WORKS HAVE BEEN CARRIED OUT ACCORDING TO THE APPROVED PLANS.

3. WASTE BINS SHALL BE EMPTIED AS NECESSARY, DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT

4. PROPER DRAINAGE OF THE SITE SHALL BE MAINTAINED. TO THIS END DRAINS (INCLUDING INLET AND OUTLET WORKS) SHALL BE CHECKED TO ENSURE THAT THEY ARE OPERATING AS INTENDED,ESPECIALLY THAT:-

    a. NO LOW POINTS EXIST WHICH CAN OVERTOP IN A LARGE STORM EVENT.
    b. AREAS OF EROSION ARE REPAIRED (e.g LINED WITH SUITABLE MATERIAL) AND/OR VELOCITY OF FLOW IS REDUCED APPROPRIATELY THROUGH CONSTRUCTION OF SMALL CHECK DAMS OR INSTALLING ADDITIONAL DIVERSIONS UPSLOPE
    c. BLOCKAGES ARE CLEARED (THESE MIGHT OCCUR BECAUSE OF SEDIMENT POLLUTION, SAND/SOIL/SPOIL BEING DEPOSITED IN OR TOO CLOSE TO THEM, BREACHED BY VEHICLE WHEELS etc)

5. SAND/SOIL/SPOIL MATERIALS PLACED CLOSER THAN 2m FROM HAZARD AREAS SHALL BE REMOVED SUCH HAZARD AREAS INCLUDE ANY AREAS OF HIGH VELOCITY WATER FLOWS (eg WATERWAYS AND GUTTERS) PAVED AREAS AND DRIVEWAYS.

6. RECENTLY STABILISED LANDS SHALL BE CHECKED TO ENSURE THAT THE EROSION HAZARD HAS BEEN EFFECTIVELY REDUCED. ANY REPAIRS SHALL BE INITIATED AS APPROPRIATE.

7. EXCESSIVE VEGETATIVE GROWTH SHALL BE CONTROLLED THROUGH MOWING OR SLASHING.

8. ALL SEDIMENT DETENTION SYSTEMS SHALL BE KEPT IN GOOD WORKING CONDITION. IN PARTICULAR ATTENTION SHALL BE GIVEN TO:-

    a. RECENT WORKS TO ENSURE THAT THEY HAVE NOT RESULTED IN DIVERSION OF SEDIMENT LADEN WATER AWAY FROM THEM.
    b. DEGRADABLE PRODUCTS TO ENSURE THAT THEY ARE REPLACED AS REQUIRED
    c. SEDIMENT REMOVAL TO ENSURE THE DESIGN CAPACITY OR LESS REMAINS IN THE SETTLING ZONE.

9. ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS SHALL BE CONSTRUCTED AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS (ie MAKE ONGOING CHANGES TO THIS PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS AT THE WORKS SITE OR ELSEWHERE IN THE CATCHMENT.

10. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN A FUNCTIONING CONDITION UNTIL ALL EARTHWORKS ACTIVITIES ARE COMPLETED AND THE SITE STABILISED.

11. WATERS IN SEDIMENT RETENTION BASIN(S) THAT OCCUPY MORE THAN 1/4 OF THE DESIGN CAPACITY DURING THAT STAGE OF THE WORKS UP UNTIL COMMISSIONING OF THE BASIN(s) SHALL BE:-

    a. TREATED WITH A FLOCCULATING AGENT (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.)
    b. DISCHARGED WITHIN 5 days FROM THE CONCLUSION OF ANY STORM EVENT LARGE ENOUGH TO FILL THE BASIN TO THAT LEVEL.

12. LITTER, DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM THE GROSS POLLUTANT TRAPS AND TRASH RACKS AS REQUIRED.

A	ISSUE FOR CONSTRUCTION APPROVAL	RT/VG	NDW	MS	AM	20/07/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.16
SOIL & WATER MANEGEMENT NOTES

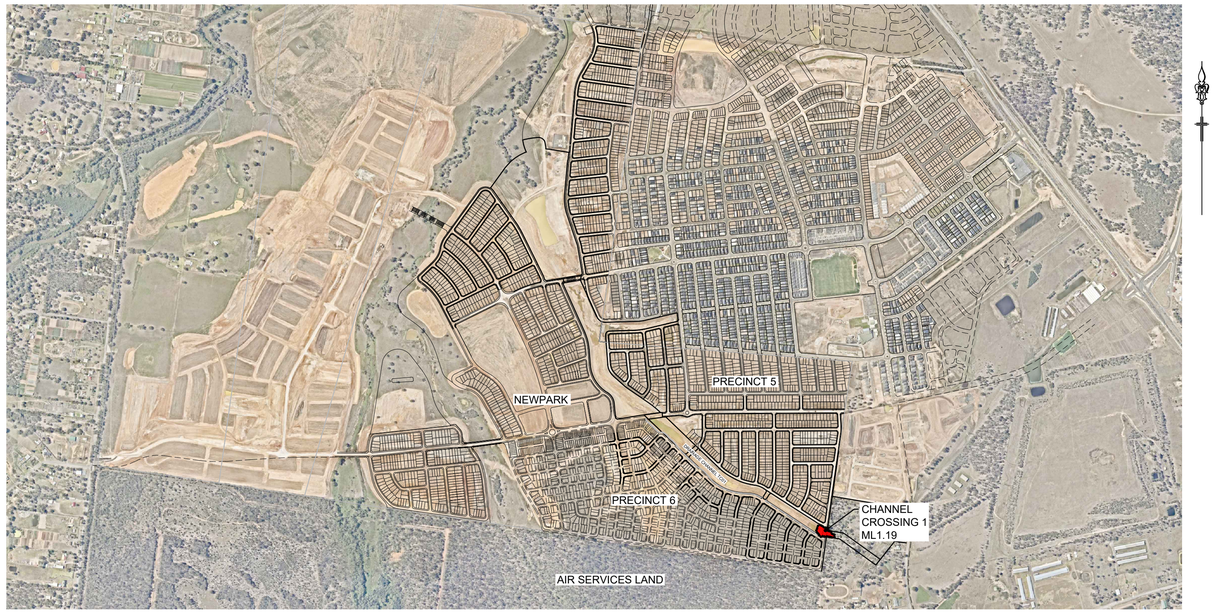
PLAN No: 11035005/CC216 A
FILE No: 11035005CC216
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:12:13 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\04_Culvert 2 ML1_16\11035005CC216.dwg

Stockland

ELARA - PRECINCT 6
SECTION 7.11 CONSTRUCTION CERTIFICATE

CULVERT CROSSING WORKS
CONTRIBUTION PLAN No. 21, ITEMS ML1.19 & MP10.7
COUNCIL REFERENCE: DA-18-00400



LOCALITY SKETCH

Prepared By:

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300
W www.jwprince.com.au
E jwp@jwprince.com.au

ISSUED FOR CONSTRUCTION APPROVAL

PLAN No. 11035005/CC150 B

FILE No. 11035005CC150

Plotted: November 27, 2018 File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC150.dwg

LEGEND

DESCRIPTION	PROPOSED	EXISTING	FUTURE
EXTENT OF WORKS			
KERB & GUTTER	K&G		
ROLL KERB	RK		
DISH CROSSING	DC		
PRAM RAMP			
DRAINAGE LINE, PIT & EASEMENT	05/05 Ø225		
DRAINAGE LINE & PIT	05/06 Ø600		
SUBSOIL DRAINAGE	SS SS		
HEADWALL			
CONTOURS	46.0	47.0	
CATCH DRAIN			
ELECTRICITY, POWER POLE	E E E E	eE eE FP eE	
TELECOM, BOX	T T T T	eT eT eT eT	
WATER, STOP VALVE, HYDRANT	W W W W	eW eW HYD eW SV	
SEWER, MANHOLE	S S S S	eS eS SMH	
GAS	G G G G	eG eG eG	
STABILISED SITE ACCESS			
SEDIMENT FENCE			
STRAW BALE BARRIER			
STOCKPILE	SP		
PROTECTIVE FENCING			
MESH AND GRAVEL INLET FILTER			
GEOTEXTILE INLET FILTER			
CATCHMENT BOUNDARY			
FLOW DIRECTION ARROW			
CONCRETE PAVEMENT			
BOARDWALK			

CIVIL PLAN INDEX

PLAN NO.	PLAN NAME	REV
11035005/CC150	COVER SHEET	B
11035005/CC151	GENERAL NOTES, LEGEND & INDEX	B
11035005/CC152	OVERALL ARRANGEMENT PLAN	B
11035005/CC153	SETOUT PLAN	B
11035005/CC154	LAYOUT PLAN	B
11035005/CC155	CULVERT DETAIL PLAN	B
11035005/CC156	PAVEMENT PLAN	B
11035005/CC157	ROAD 622 LONGITUDINAL SECTION, ROCK WALL & SAFETY BARRIER DETAIL	B
11035005/CC158	CULVERT SECTIONS SHEET 1	B
11035005/CC159	CULVERT SECTIONS SHEET 2	B
11035005/CC160	CULVERT SECTIONS SHEET 3	B
11035005/CC161	DROP STRUCTURE PLAN AND DETAILS	B
11035005/CC162	STORMWATER DETAILS	B
11035005/CC163	SOIL & WATER MANAGEMENT PLAN	B
11035005/CC164	SOIL & WATER MANAGEMENT NOTES	B

CONTRIBUTIONS PLAN (NO.21) ITEMS INCLUDED IN THIS APPLICATION

SITE NO.	DESCRIPTION
ML 1.19	CULVERT CROSSING
MP 10.7	LOCAL ROAD - FULL WIDTH CROSSING

GENERAL NOTES

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S "WORKS SPECIFICATION - CIVIL 2005".
2. SURVEY MARKS: -
   a. SURVEY MARKS SHOWN SHALL BE RETAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE SUPERINTENDENT MUST BE NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL.
3. THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
4. THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE OWNERS. TO BE PROVIDED PRIOR TO THE APPROVAL OF THE PLANS.
5. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJOINING PROPERTIES.
6. COUNCIL'S TREE PRESERVATION ORDER MUST BE OBSERVED AND NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT THE PRIOR APPROVAL OF COUNCIL'S ENGINEER.
7. TREES TO BE RETAINED ON SITE SHALL BE PROTECTED BY SUITABLE STURDY APPROVED PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF SITE WORKS.
8. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES, OUT-HOUSES, CAR BODIES AND DEBRIS ETC.
9. FILLING IS TO BE FROM A NOMINATED SOURCE, OF SOUND CLEAN MATERIAL, FREE FROM LARGE ROCK, STUMPS, CONTAMINATED MATTER, INDUSTRIAL AND BUILDING WASTE. ORGANIC MATTER AND OTHER DEBRIS. PLACING OF FILLING ON THE PREPARED AREAS SHALL NOT COMMENCE UNTIL THE AUTHORITY TO DO SO HAS BEEN OBTAINED FROM THE COUNCIL.
10. THE FILL MATERIAL THAT MAY BE RECEIVED AT THE DEVELOPMENT SITE ARE EXCAVATED NATURAL MATERIALS (VENM) AND EXCAVATED NATURAL MATERIAL (ENM) WITHIN THE MEANING OF THE PROTECTION OF THE ENVIRONMENTAL OPERATIONS ACT1997.
11. SITE FILL AREAS: - THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
12. ALL SITE FILLING TO BE COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY A REGISTERED SOIL LABORATORY IN ACCORDANCE WITH COUNCIL'S "WORKS SPECIFICATION".
13. ALL SITE REGRADING AREAS SHALL BE GRADED AT A MINIMUM 1% TO THE ENGINEER'S REQUIREMENTS.
14. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED BY THE SUPERINTENDENT.
15. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS.
16. DIMENSIONS OF ANY DETAIL SHALL NOT BE SCALED - DIMENSIONS, IF IN DOUBT, SHALL BE VERIFIED BY THE SUPERINTENDENT.
17. ALL CONSTRUCTION AND RESTORATION WORK ON COUNCIL'S ROAD AND FOOTPATH AREA ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS AND COUNCIL'S STANDARD SPECIFICATIONS.
18. ALL WORKS TO BE IN ACCORDANCE WITH THE SALINITY MANAGEMENT PLAN BY GEOTECH TESTING PTY LTD 8537/2-AA.
19. ALL STREET NAME POLES AND LIGHT POLES SHALL BE BLACK POWDER COATED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S ENGINEERING GUIDE FOR DEVELOPMENT.

NOTE:
THESE PLANS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING
- THE ELARA SECTION 94 DETAILED CONCEPT PLANS BY J.WYNDHAM PRINCE 11035005/DC01 - 72
- LANDSCAPED CHANNEL TC01 PART 1 1 ML 1.15, ML1.18 REFER TO J.WYNDHAM PRINCE 11035005/CC300-CC336
- CHANNEL TC02 ML1.22 REFER TO J.WYNDHAM PRINCE PLANS 11035005/CC100-CC136
- CULVERT CROSSING 2 ML 1.16 , REFER TO J.WYNDHAM PRINCE 11035005/CC200-CC216
- ABELL ROAD CULVERT CROSSING, REFER TO J.WYNDHAM PRINCE 11035005/CC250-CC300
- LANDSCAPE PLANS BY PATERSON DESIGN STUDIO.

SURFACE NOTES

1. BATTER SLOPES ARE TYPICALLY 1v:5h UNLESS NOTED OTHER WISE.
2. EXISTING SURFACE BASED ON BULK EARTHWORKS SURFACE REFER TO JWP PLANS 1103502CC000-CC108

SURVEY SET OUT INFORMATION NOTES:

1. ALL SITE SET OUT AND CONTROL POINTS ARE TO BE CERTIFIED BY A REGISTERED SURVEYOR.
2. THE INFORMATION DETAILED ON THE CERTIFIED CONSTRUCTION CERTIFICATE PLANS TAKES PRECEDENCE OVER ALL ELECTRONIC INFORMATION PROVIDED. THE ORDER OF PRIORITY FOR USE OF ALL INFORMATION PROVIDED IS AS FOLLOWS:
   a. CERTIFIED CONSTRUCTION CERTIFICATE DRAWINGS
   b. 2D DRAFTING BASE (ELECTRONIC FILE)
   c. 3D DTM (ELECTRONIC FILE)
3. ANY DISCREPANCY BETWEEN ANY OF THE INFORMATION CONTAINED WITHIN THESE FILES IS TO BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT PRIOR TO CONSTRUCTION WHO WILL SEEK CLARIFICATION AND ISSUE INSTRUCTIONS ON THE APPROPRIATE COURSE OF ACTION.

STORMWATER NOTES

1. STORMWATER DESIGN CRITERIA:

   AVERAGE RECURRANCE INTERVAL:
   1:100 MAJOR SYSTEM
   1:10 MINOR SYSTEM
2. PIPES TO BE INSTALLED TO TYPE HS2 SUPPORT IN ACCORDANCE WITH AS 3725 (1989) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 300mm LAYERS TO MINIMUM 100% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
3. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 (1998) AND AS/NZS 3500 3.2 (1998).
4. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
5. GRATES AND COVERS SHALL CONFORM TO AS 3996.
6. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
7. DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH NON-COHESIVE SAND AND HAVE 3m OF SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK, DISCHARGING INTO DOWN STREAM PITS. FOR PIPELINES GREATER THAN 525Ø, SUBSOIL DRAIN SHALL BE PROVIDED ON BOTH SIDES OF THE TRENCH.
8. ALL STORMWATER PIPES WITHIN ROADS TO BE REINFORCED CONCRETE PIPE (RRJ) CLASS 2 OR FRC CLASS 2 UNLESS NOTED OTHERWISE.
9. DRAINAGE LINES ON PLANS ARE DIAGRAMMATIC ONLY AND PIPE CENTRELINES SHALL ENTER AND EXIT PITS AT THE CENTRE OF THE RESPECTIVE PIT WALLS.
10. STEP IRONS REQUIRED WHERE THE PIT EXCEEDS 1200 IN DEPTH. REFER TO COUNCIL DRAWING A(BS)107M.

CUSTOM MADE PRECAST PIT NOTES

1. DESIGN DOCUMENTATION REFLECTS PRECAST DRAINAGE PITS BEING USED FOR THE SITE. UNLESS NOTED OTHERWISE. AUSPITS OR SIMILAR APPROVED CUSTOM MADE PRECAST PITS TO BE USED.
2. PITS TO COMPLY WITH THE FOLLOWING PARAMETERS:
   a. ARE SPECIFICALLY MANUFACTURED FOR THE PROJECT.
   b. EACH PIT IS ACCOMPANIED BY A CERTIFICATE OF STRUCTURAL ADEQUACY SIGNED BY A NPER ENGINEER (STRUCTURAL)
   c. THE STRUCTURAL CERTIFICATION OF THE PITS SHOULD INCLUDE ANY ADDITIONAL PRECAST ELEMENTS REQUIRED TO BRING THE PIT UP TO FINAL LEVELS ON SITE.
   d. PITS MUST BE FIRMLY BEDDED ON SOUND MATERIAL.
   e. CONCRETE IS TO BE POURED AROUND THE BASE TO AID IN STABILISATION OF THE PIT.
   f. PIT FLOORS ARE TO HAVE A 1% FALL TOWARDS THE OUTLET PIPE.
   g. ANY PIT REQUIRING MODIFICATION AFTER IT HAS BEEN POURED IN THE FACTORY OR DAMAGED IN TRANSPORT CANNOT BE USED.
   h. ALL WORK TO BE TO THE SATISFACTION OF COUNCIL'S DEVELOPMENT INSPECTORS.
3. SHOULD THE CONTRACTOR CHOOSE TO CONSTRUCT ANY PIT AS "CAST-INSITU", IT'S THE CONTRACTORS RESPONSIBILITY TO PROVIDE DETAILED PIT DRAWINGS AND STRUCTURAL CERTIFICATION OF THE RELEVANT PITS.

SURVEYED BY:
BCC SURVEY
CAD REFERENCE: SOUTH STREET SURVEY.12daz
DATE RECEIVED: 19/12/2016

BMD BULK EARTHWORKS SURFACE
CAD REFERENCE: tin BEW 171214.12daz
DATE RECEIVED: 29/01/2018

CRAIG & RHODES DRONE SURVEY
CAD REFERENCE: 20180213_C&R_MARSDEN-PARK_ELEVATION.dwg
DATE RECEIVED: 22/02/2018

www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG

UTILITIES SHOWN ARE DIAGRAMMATIC ONLY, CONTRACTORS ARE RESPONSIBLE TO LOCATE AND AVOID DAMAGE TO THEM AS SPECIFIED BY EACH UTILITIES EXCAVATION GUIDE LINES & STANDARDS.

NOTE: UTILITIES SHOWN MAY NOT INCLUDE ALL SERVICES WITHIN THE LIMIT OF WORKS

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
A	ISSUED FOR CONSTRUCTION APPROVAL	RT	NDW	MS		13/06/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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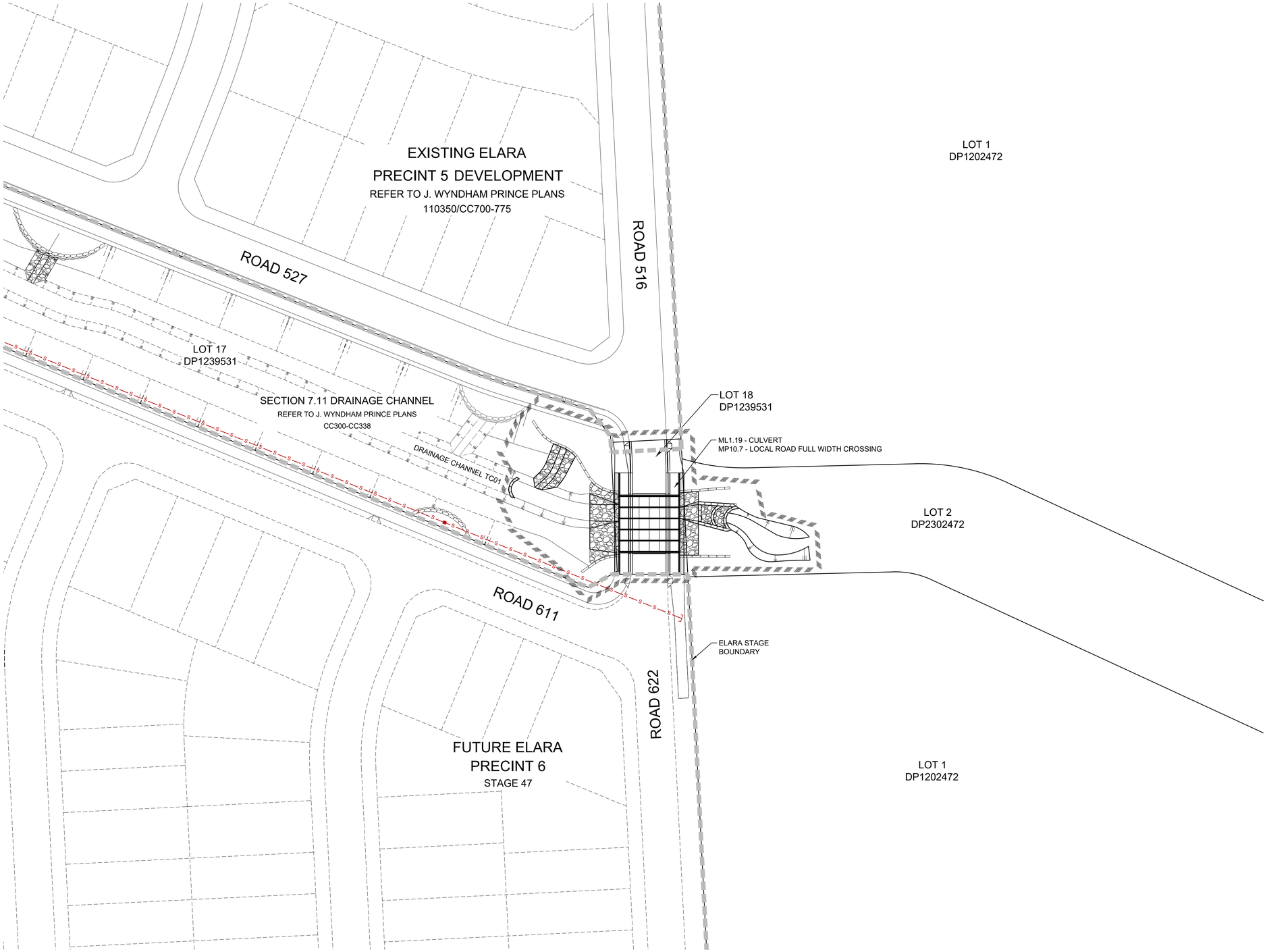
ELARA S94 WORKS
CULVERT CROSSING ML1.19
GENERAL NOTES, LEGEND & INDEX

PLAN No: 11035005/CC151 B
FILE No: 11035005CC151
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:07:19 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC151.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT:

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B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
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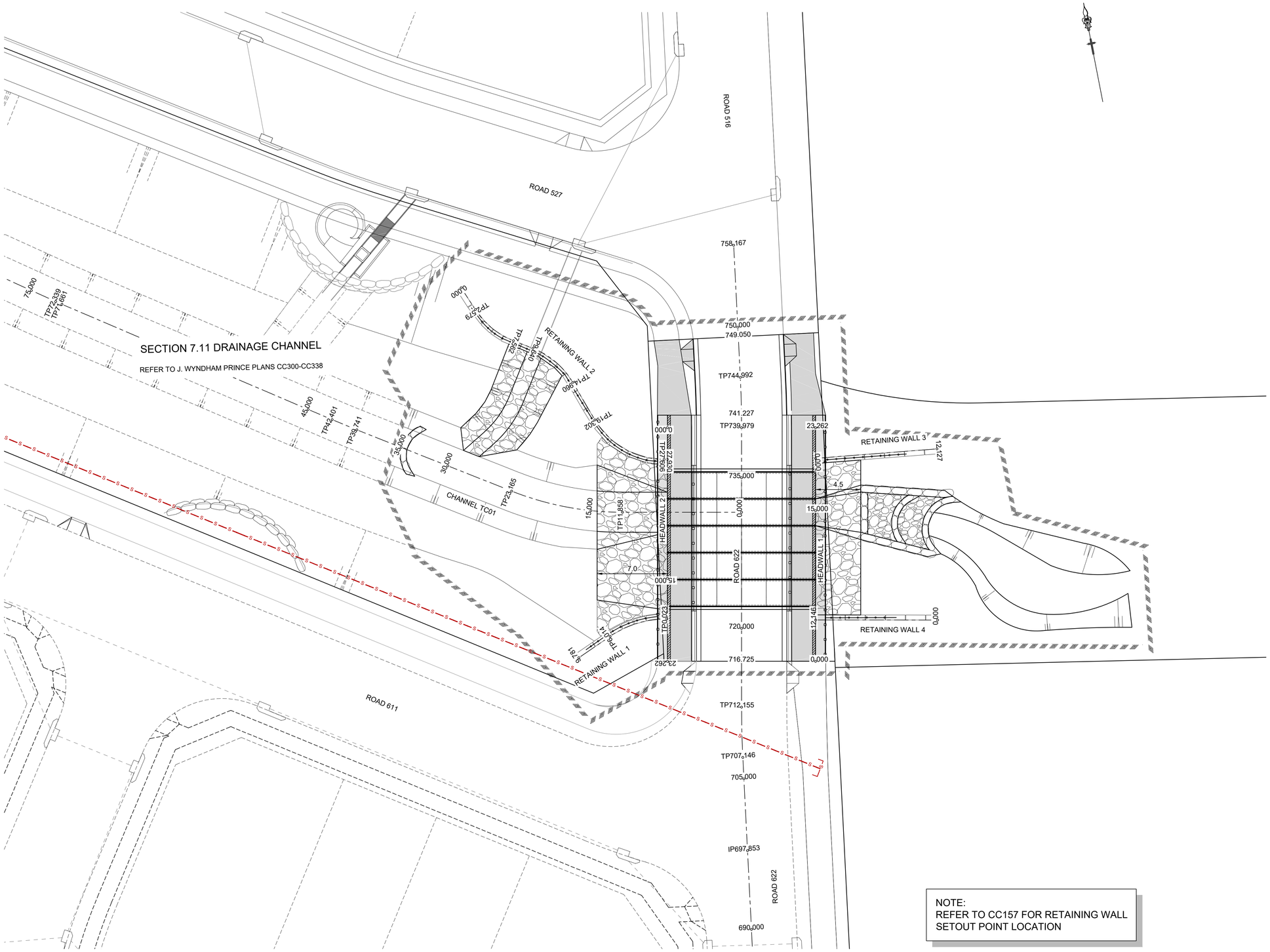
AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
CULVERT CROSSING ML1.19
OVERALL ARRANGEMENT PLAN

PLAN No: 11035005/CC152 B
FILE No: 11035005CC152
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:07:32 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC152.dwg



TC01 REACH 1					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297690.69	6268329.12	281°02'05.02"		
11.86	297679.06	6268331.39	281°02'05.02"		
17.51	297673.44	6268332.49		30	11.31
23.16	297668.62	6268335.57	302°37'44.60"		
39.74	297654.66	6268344.51	302°37'44.60"		
41.07	297653.54	6268345.23		100	2.66
42.4	297652.44	6268345.97	304°09'10.16"		
71.66	297628.23	6268362.4	304°09'10.16"		
72	297627.95	6268362.59		30	0.68

ROAD 622					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297463.9	6268500.08	212°52'10.67"		
49.76	297436.89	6268458.29			
93.24	297412.75	6268422.12	213°43'00.04"		
122.13	297396.45	6268397.69		-130	57.78
151.02	297392.23	6268368.61	188°14'59.96"		
280.8	297373.61	6268240.18	188°14'59.96"		
292.59	297371.46	6268225.33		-15	23.57
304.37	297386.31	6268223.18	98°14'17.59"		
574.51	297653.66	6268184.47	98°14'17.59"		
586.3	297668.52	6268182.32		-15	23.58
598.09	297670.66	6268197.19	8°09'52.16"		
697.85	297684.83	6268295.94			
707.15	297686.14	6268305.14	8°09'52.83"		
709.65	297686.5	6268307.62		100	5.01
712.15	297686.98	6268310.08	11°02'05.02"		
739.98	297692.31	6268337.39	11°02'05.02"		
742.49	297692.79	6268339.85		-100	5.01
744.99	297693.14	6268342.33	8°09'45.00"		
758.17	297695.01	6268355.37	8°09'45.00"		

RETAINING WALL 1					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297681.37	6268320.12	281°02'05.02"		
0.02	297681.35	6268320.13			
3.02	297678.31	6268320.72		-10	5.99
6.01	297675.48	6268319.5	246°42'26.16"		
9.78	297672.02	6268318.01	246°42'26.16"		

RETAINING WALL 2					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297667.57	6268356.4	158°05'44.29"		
2.58	297668.53	6268354.01	158°05'44.29"		
5.07	297669.49	6268351.62		-8	4.98
7.56	297671.66	6268350.24	122°24'35.92"		
9.64	297673.42	6268349.12	122°24'35.92"		
12.3	297675.75	6268347.64		8	5.32
14.96	297676.67	6268345.04	160°30'43.16"		
19.3	297678.12	6268340.95	160°30'43.16"		
23.45	297679.64	6268336.64		-8	8.3
27.61	297684.13	6268335.76	101°02'05.02"		
27.93	297684.45	6268335.7	101°02'05.02"		

RETAINING WALL 3			
CHAINAGE	EASTING	NORTHING	BEARING
0	297698.96	6268332.98	96°34'21.44"
12.13	297711	6268331.59	96°34'21.44"

RETAINING WALL 4			
CHAINAGE	EASTING	NORTHING	BEARING
0	297707.8	6268314.85	281°04'01.23"
12.15	297695.88	6268317.18	281°04'01.23"

HEADWALL 1			
CHAINAGE	EASTING	NORTHING	BEARING
0	297695.09	6268313.14	11°02'05.02"
23.26	297699.54	6268335.97	11°02'05.02"

HEADWALL 2			
CHAINAGE	EASTING	NORTHING	BEARING
0	297685.06	6268338.8	191°02'05.02"
23.26	297680.61	6268315.97	191°02'05.02"

NOTE:
REFER TO CC157 FOR RETAINING WALL SETOUT POINT LOCATION

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
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	AMENDMENT	DES	DRN	CKD	APR	DATE

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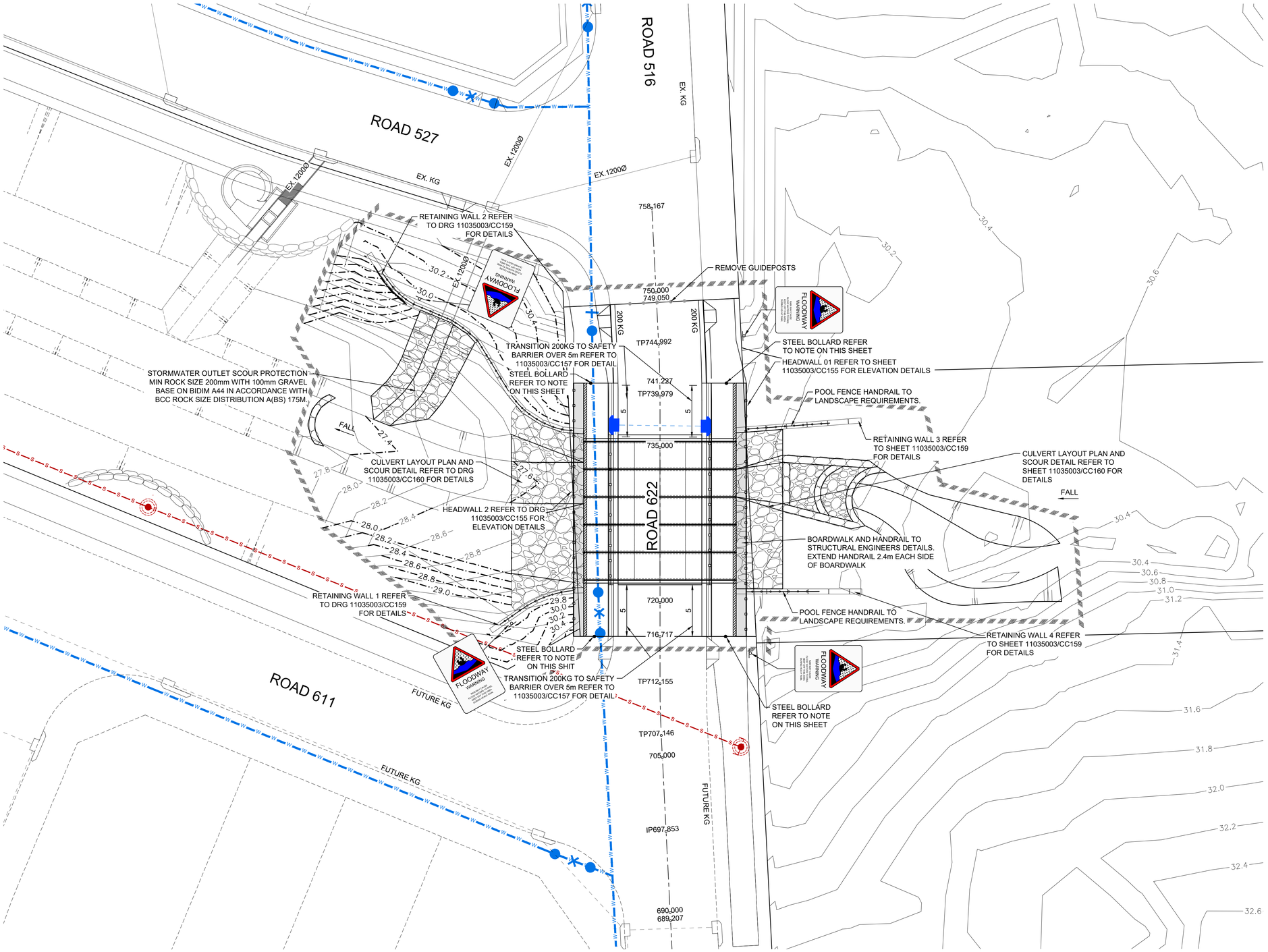
ELARA S94 WORKS
CULVERT CROSSING ML1.19
SETOUT PLAN

PLAN No: 11035005/CC153 B
FILE No: 11035005CC153
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:08:01 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC153.dwg



NOTE:
1) REFER TO STRUCTURAL ENGINEER'S PLANS FOR THE ITEMS BELOW
- CULVERT SLAB DETAILS
- HEADWALL DETAILS
- SANDSTONE LOG WALL DETAILS
- BOARDWALK DETAILS
- SAFETY BARRIER DETAILS
- AUSTRAL KEYSTONE RETAINING WALL

2) CONSTRUCT ONE (1) STEEL BOLLARD AT EACH END OF FOOTPATH WHERE INDICATED, BOLLARDS SHALL HAVE A WRAP AROUND REFLECTIVE TAPE TO COUNCIL'S SPECIFICATION AND MANUFACTURES DETAILS

NOTE:
EXISTING SURFACE BASED ON BULK EARTHWORKS SURFACE. REFER TO JWP PLANS 11035002CC000-CC108

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
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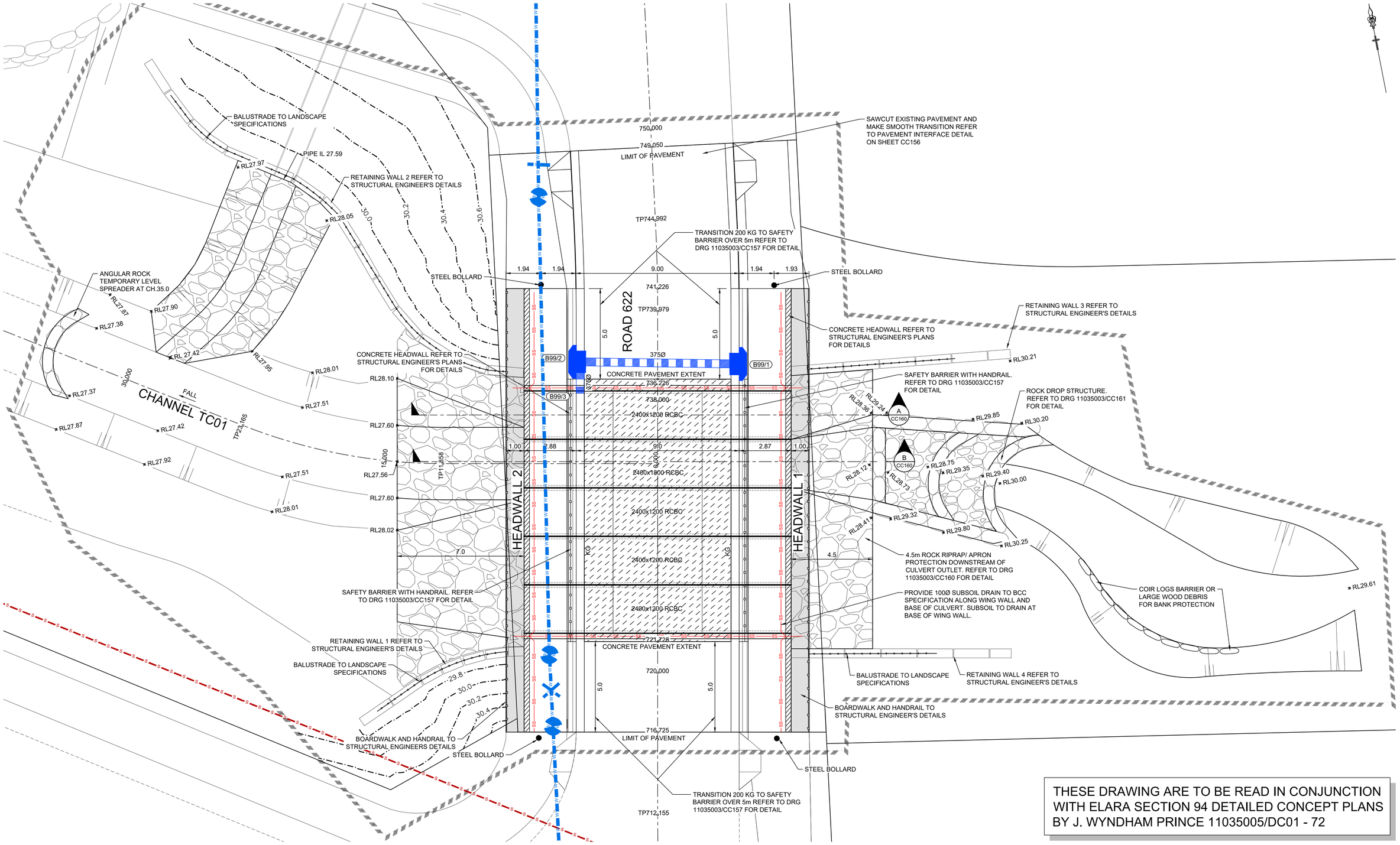
ELARA S94 WORKS
CULVERT CROSSING ML1.19
LAYOUT PLAN

PLAN No: 11035005/CC154 B
FILE No: 11035005CC154
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:08:25 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC154.dwg



THESE DRAWING ARE TO BE READ IN CONJUNCTION WITH ELARA SECTION 94 DETAILED CONCEPT PLANS BY J. WYNDHAM PRINCE 11035005/DC01 - 72

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
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ELARA S94 WORKS
CULVERT CROSSING ML1.19
CULVERT DETAIL PLAN

PLAN No: 11035005/CC155 B
FILE No: 11035005CC155
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:08:48 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC155.dwg

LEGEND

PAVEMENT DESIGN (REFER TO REPORT BY GEOTECH TESTING PTY LTD (Ref:8537/5-AA) DATED 03/07/2018

PAVEMENT NOTES - ROAD 622
CH716.725-CH721.727 &
CH736.227-749.050 (2 x 10^5 ESA)

50mm MINIMUM THICKNESS (AC10) 2 x 25mm LAYERS
SINGLE COAT 7mm FLUSH SEAL
150mm DGB20 BASECOURSE COMPACTED TO MIN 98% M.M.D.D.
160mm CRUSHED SANDSTONE SUB BASECOURSE COMPACTED TO MIN 98% M.M.D.D.
300mm COMPACTED SUBGRADE MIN. REQUIREMENTS: 100% S.M.D.D. SUBGRADE TO BE CRUSHED SANDSTONE OR TREATED WITH 4% LIME

CONCRETE PAVEMENT CH721.727-736.227
180mm CONCRETE BASE (32MPa CONCRETE, DWELLED JOINTS AND SHRINKAGE REINFORCEMENT)
150mm CRUSHED SANDSTONE (100% STANDARD MAXIMUM DRY DENSITY AT OMC ± 2%)

FOOTPATH - TO COUNCIL SPECIFICATION
125mm THICK CONCRETE BASE 20MPa
CRUSHED SANDSTONE (100% STANDARD MAXIMUM DRY DENSITY AT OMC ±2%) SL82 MESH WITH 35mm TOP COVER
REFER TO STRUCTURAL ENGINEERS PLAN FOR CONCRETE PAVEMENT DETAILS & JOINTING

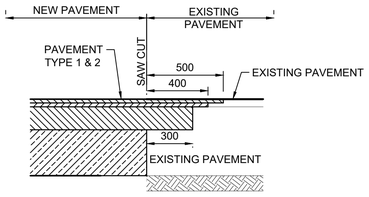
SCOUR PROTECTION
REFER TO SHEET CC160 FOR DETAILS

LANDSCAPE AREA
TO LANDSCAPE ARCHITECT SPECIFICATION

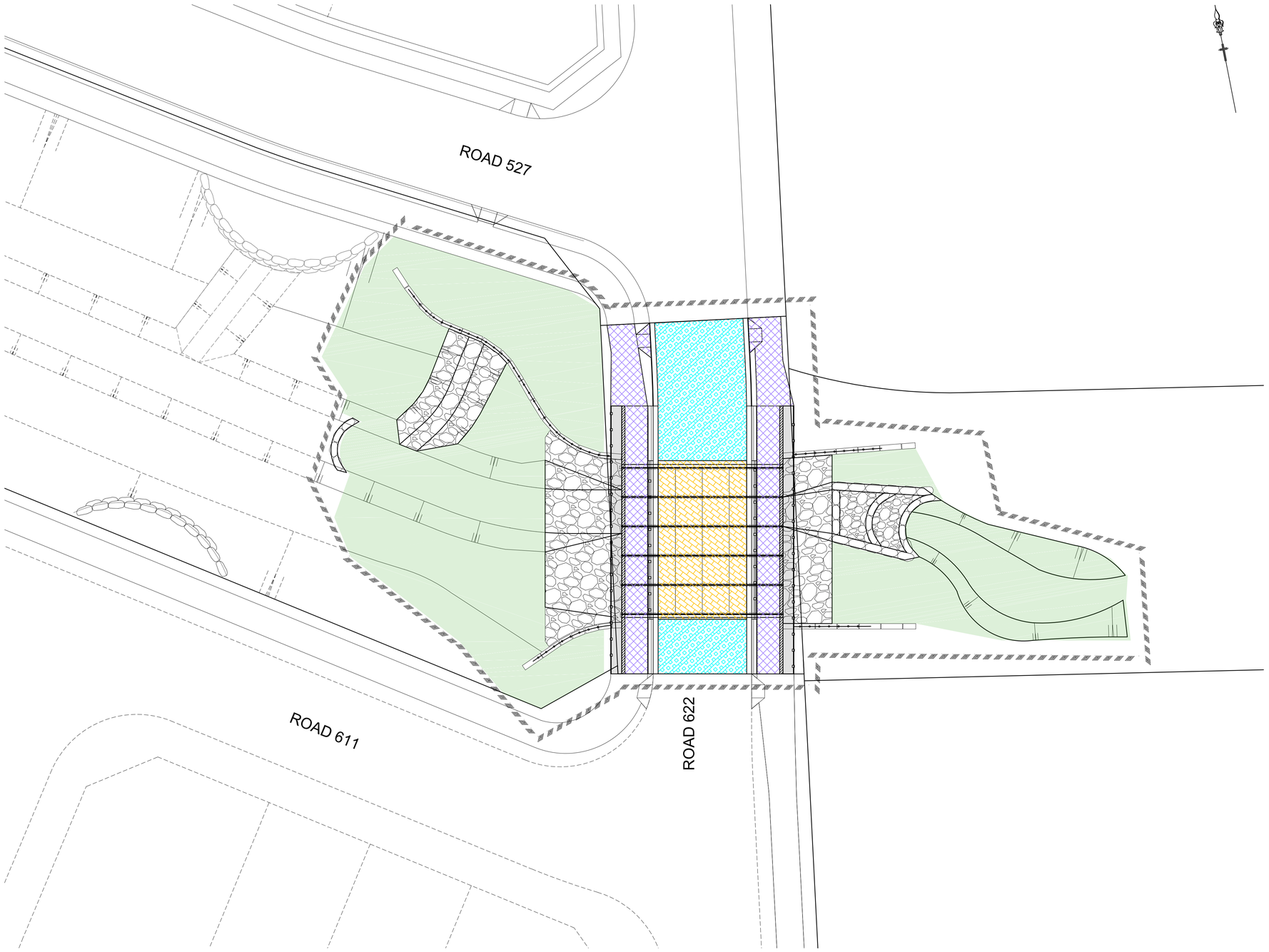
BOARDWALK
REFER TO STRUCTURAL ENGINEER'S SPECIFICATIONS

NOTES:
1) PAVEMENT DESIGN SUBJECT TO GEOTECHNICAL TESTING
SUBGRADE LAYER TO BE A MINIMUM OF CBR 7.
SUBGRADE TO BE STABILAISED USING 300mm 4% LIME STABILISATION OF INSITU MATERIAL.
2) ALL FOOTPATHS AND SHARED PATHS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH BLACKTOWN COUNCIL'S PATH PAVING POLICY

CONCRETE PAVEMENT SUBJECT TO STRUCTURAL DESIGN & CERTIFICATION.



INTERFACE BETWEEN NEW PAVEMENT AND EXISTING FLEXIBLE PAVEMENTS
SCALE 1:20



1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

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ELARA S94 WORKS
CULVERT CROSSING ML1.19
PAVEMENT PLAN

PLAN No: 11035005/CC156 B
FILE No: 11035005CC156
SHEET SIZE: A1 ORIGINAL

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
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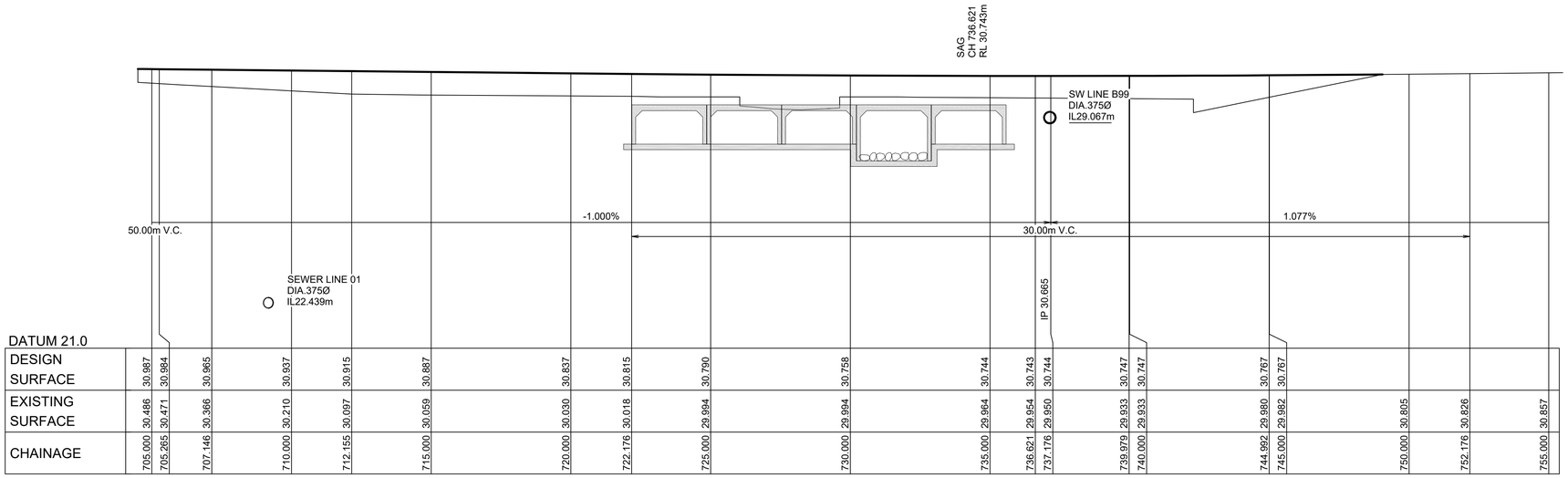
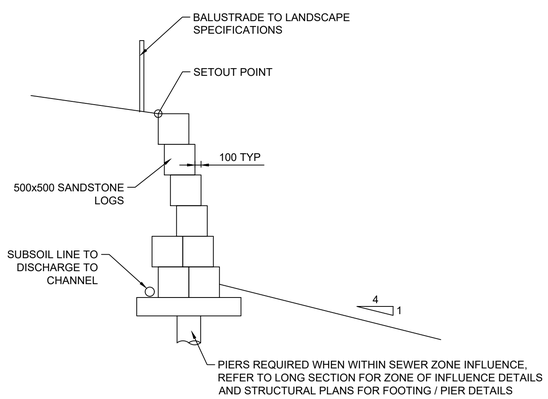
Plotted: 27 November , 2018 10:09:02 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC156.dwg



LONGITUDINAL SECTION ROAD 622

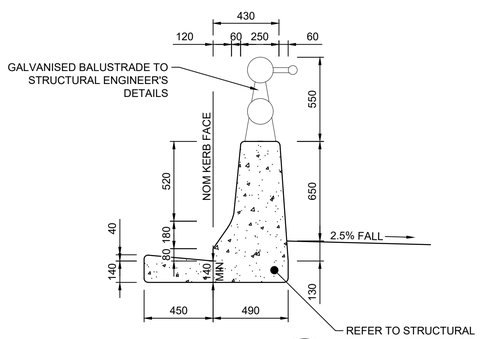
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

CONCRETE BARRIER & STACKED ROCK RETAINING WALL ARE SUBJECT TO STRUCTURAL DESIGN AND APPROVAL



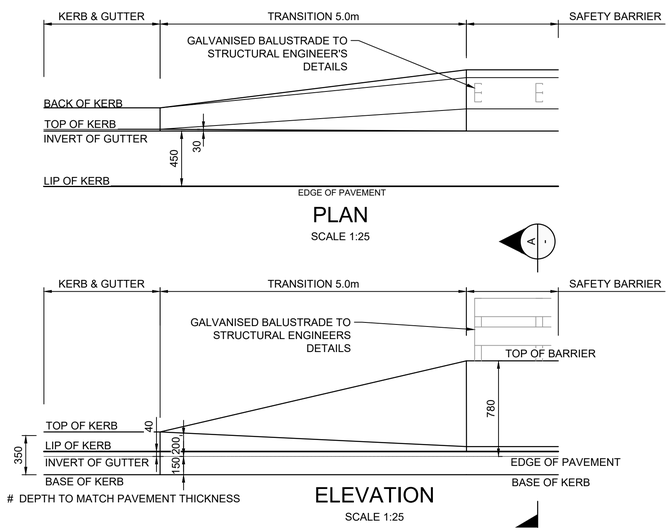
TYPICAL SECTION THROUGH SANDSTONE LOG RETAINING WALL

SCALE 1:50



SECTION A

SCALE H 1:20
V 1:20



KERB & GUTTER TO SAFETY BARRIER

1:25(AT A1) 500 0 500 1000 1500 2000 2500 MILLIMETRES

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
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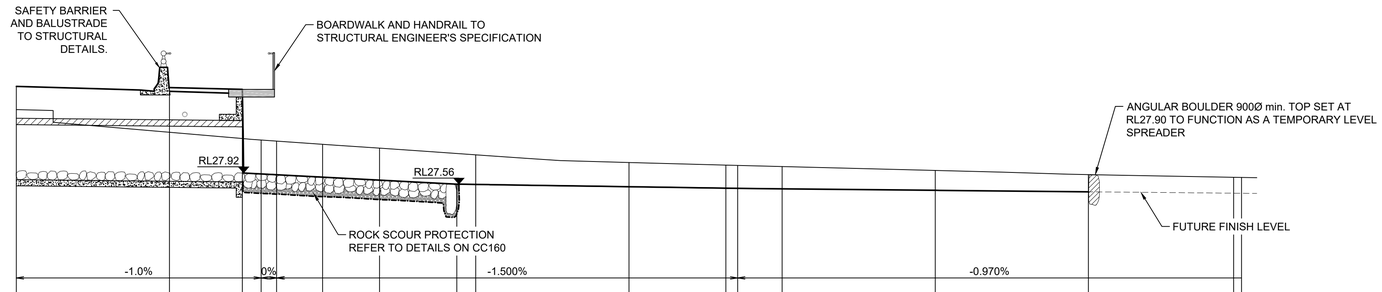
ELARA S94 WORKS
CULVERT CROSSING ML1.19
ROAD 622 LONGITUDINAL SECTION,
ROCK WALL & SAFETY BARRIER DETAIL

PLAN No: 11035005/CC157 B
FILE No: 11035005CC157
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:09:15 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC157.dwg



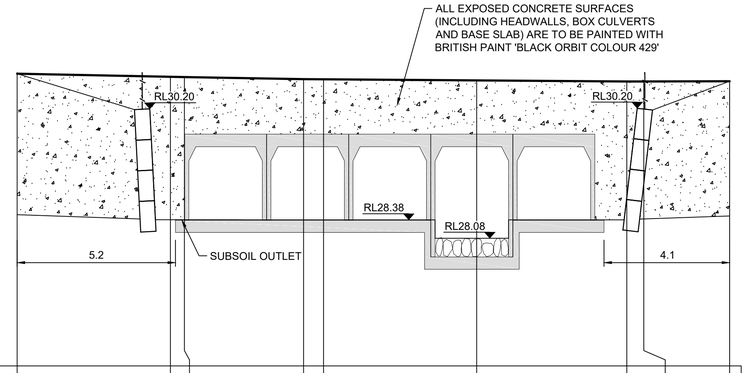
DATUM 20.0

DESIGN SURFACE	30.753	30.713	27.920	27.895	28.687	27.769	27.597	27.560	27.550	27.475	27.428	27.422	27.408	27.359	27.311	27.265	27.262
EXISTING SURFACE	29.995	29.253		28.999	28.965	28.860	28.735		28.518	28.265	28.181	28.171	28.134	28.006	27.872	27.784	27.779
CHAINAGE	0.000	5.000	7.380	7.994	8.494	10.000	11.858	14.380	15.000	20.000	23.165	23.550	25.000	30.000	35.000	39.741	40.000

CHANNEL TC01

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

SUBJECT TO STRUCTURAL DESIGN AND CERTIFICATION

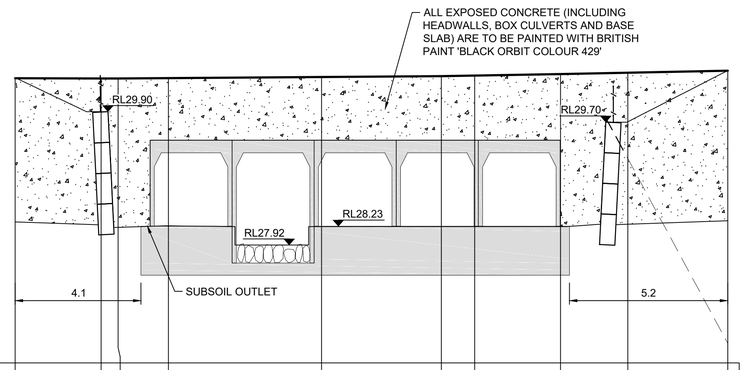


DATUM 26.0

WAE												
TOP OF WALL	30.770	30.720	30.715	30.682	30.679	30.661	30.643	30.643	30.647
CHANNEL SURFACE	30.789	28.386	28.386	28.385	28.385	28.084	28.684	30.644	30.656
CHAINAGE	0.000	5.000	5.459	9.350	10.000	15.000	19.904	20.459	23.262

HEADWALL 1

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50



DATUM 26.0

WAE										
TOP OF WALL	30.647	30.643	30.643	30.649	30.667	30.682	30.691	30.715	30.737	30.770
CHANNEL SURFACE	30.656	30.100	28.212	28.237	28.225	28.225	28.225	28.225	29.936	30.773
CHAINAGE	0.000	2.803	3.358	5.000	10.000	13.912	15.000	17.803	20.000	23.262

HEADWALL 2

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
A	ISSED FOR CONSTRUCTION APPROVAL	RT	NDW	MS		13/06/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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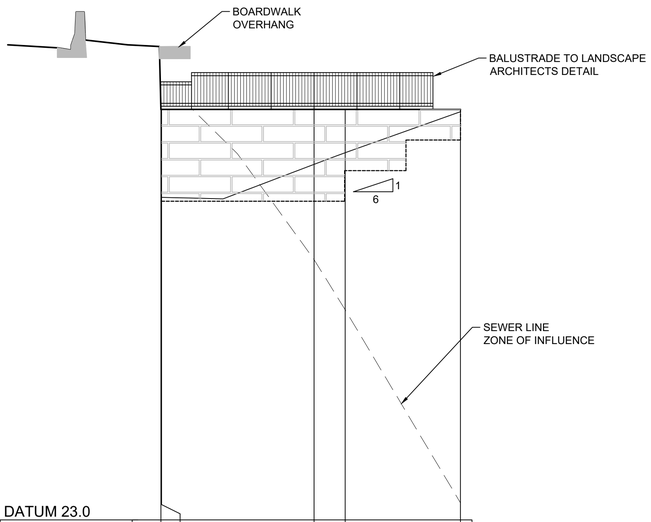
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.19
CULVERT SECTIONS
SHEET 1

PLAN No: 11035005/CC158 B
FILE No: 11035005CC158
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:09:27 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC158.dwg

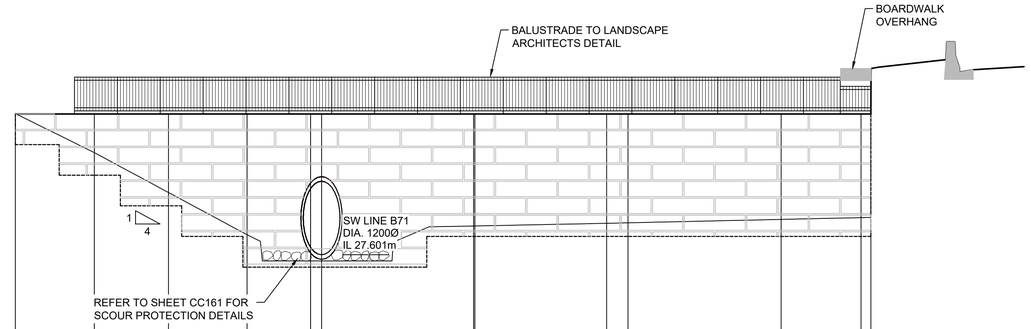


DATUM 23.0

WAE					
TOP OF WALL	29.700	29.700	29.700	29.700	29.700
BOTTOM OF WALL	28.265	28.265	28.801	28.993	29.662
CHAINAGE	0.000	0.023	5.000	6.014	9.781

LONGITUDINAL SECTION RETAINING WALL 1

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50



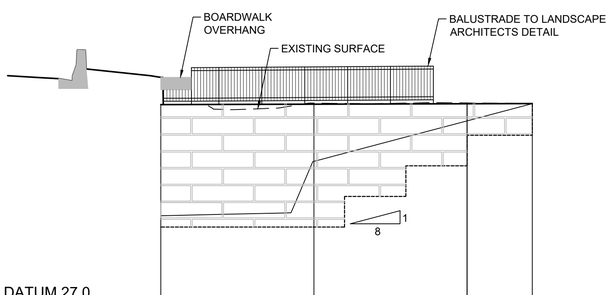
DATUM 26.0

WAE														
TOP OF WALL	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900	29.900
BOTTOM OF WALL	29.905	29.268	28.617	27.929	27.500	27.500	28.070	28.071	28.115	28.123	28.178	28.207	28.211	
CHAINAGE	0.000	2.579	5.000	7.562	9.640	10.000	14.960	15.000	19.302	20.000	25.000	27.606	27.930	

LONGITUDINAL SECTION RETAINING WALL 2

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

SUBJECT TO STRUCTURAL DESIGN AND CERTIFICATION

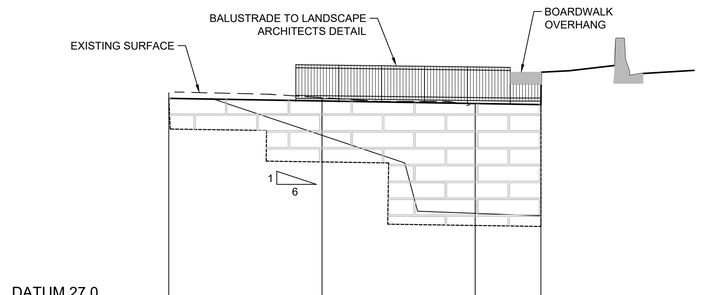


DATUM 27.0

WAE				
TOP OF WALL	30.200	30.207	30.213	30.216
BOTTOM OF WALL	28.385	29.273	29.933	
CHAINAGE	0.000	5.000	10.000	12.127

LONGITUDINAL SECTION RETAINING WALL 3

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50



DATUM 27.0

WAE				
TOP OF WALL	30.300	30.259	30.218	30.200
BOTTOM OF WALL		29.698	29.424	
CHAINAGE	0.000	5.000	10.000	12.146

LONGITUDINAL SECTION RETAINING WALL 4

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:50

1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
A	ISSED FOR CONSTRUCTION APPROVAL	RT	NDW	MS		13/06/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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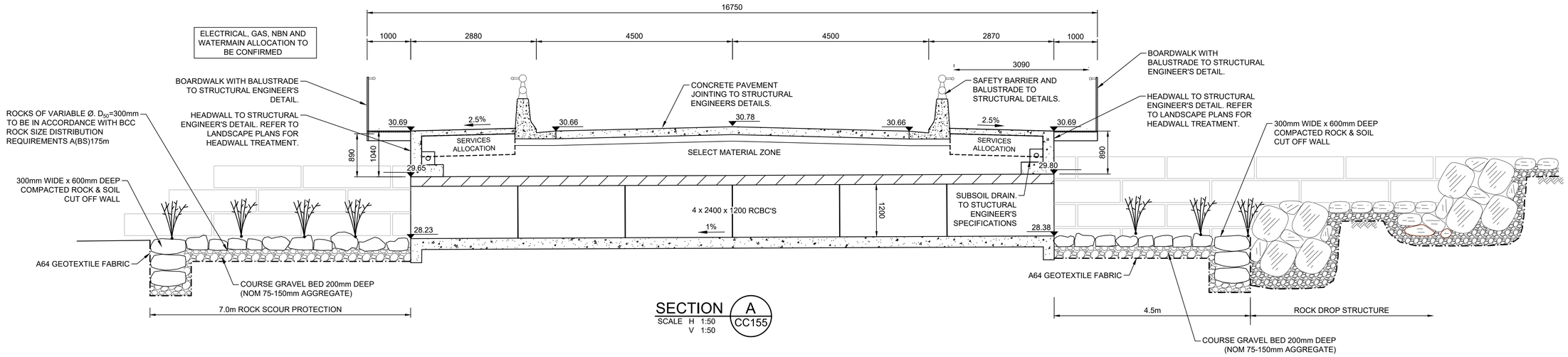
ELARA S94 WORKS
CULVERT CROSSING ML1.19
CULVERT SECTIONS
SHEET 2

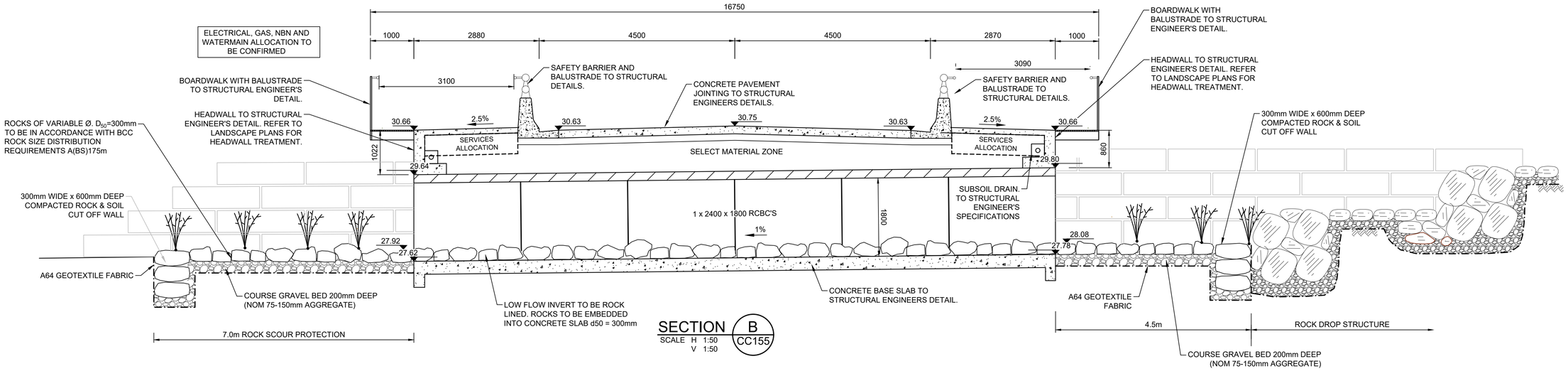
PLAN No: 11035005/CC159 B
FILE No: 11035005CC159
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November, 2018 10:09:39 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC159.dwg



SECTION A CC155
SCALE H 1:50
V 1:50

SUBJECT TO STRUCTURAL DESIGN AND CERTIFICATION



SECTION B CC155
SCALE H 1:50
V 1:50

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
A	ISSUED FOR CONSTRUCTION APPROVAL	RT	NDW	MS		13/06/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S94 WORKS
CULVERT CROSSING ML1.19
CULVERT SECTIONS
SHEET 3

PLAN No: 11035005/CC160 B
FILE No: 11035005CC160
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:09:51 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC160.dwg

CONSTRUCTION SPECIFICATION FOR ROCK DROP STRUCTURES

ROCK QUALITY AND SIZE

ROCK SHOULD BE HARD, TOUGH AND DURABLE. IT SHOULD HAVE A CRUSHING STRENGTH OF 25Mpa. THE ROCK SHOULD BE FREE OF DEFINED CLEAVAGE PLANES AND SHOULD NOT BE ADVERSELY AFFECTED BY REPEATED WETTING AND DRYING.
ROCK SHOULD PREFERABLY BE PREDOMINANTLY ANGULAR IN SHAPE WITH NOT MORE THAN 25% OF ROCKS, DISTRIBUTED THROUGH THE GRADATION, HAVING A LENGTH MORE THAN TWICE THE BREADTH OR THICKNESS. NO ROCK SHOULD HAVE A LENGTH EXCEEDING 2.5 TIMES ITS BREADTH OR THICKNESS.

ROCK GRADATION

ROCK SHOULD NOT BE SINGLE SIZED, BUT SHOULD BE A WELL GRADED MIXTURE DESIGNED TO ENSURE THAT ALL INTERICES BETWEEN ROCKS ARE FILLED WITH ROCK OF PROGRESSIVELY SMALLER SIZE. THIS HAS THE COMBINED EFFECT OF:

- ENSURING THAT NO SIGNIFICANT VOIDS OCCUR IN THE ROCK BLANKET THROUGH WHICH UNDERLYING MATERIAL COULD BE WASHED OUT
- CREATING AN INTERLOCKING MASS OF ROCK IN WHICH NO INDIVIDUAL ROCK IS FREE TO MOVE BY ITSELF: AND
- CREATING A SHIELD EFFECT ON THE SURFACE OF THE ROCK WHICH AVOIDS HIGH DRAG FORCES WHICH OCCUR WHEN INDIVIDUAL ROCKS PROTRUDE INTO THE FLOW.

CONSTRUCTION

RAMP SURFACE MATERIAL: THE RAMP SURFACE BE CONSTRUCTED OF LARGE UPRIGHT POSITIONED, HARD ROCKTYPE BOULDERS WHICH ARE MACHINE PLACED AND LOCKED IN. THE BOULDERS ARE POSITIONED SO THAT MAXIMUM HEIGHT DIFFERENCE IS ACHIEVED BETWEEN NEIGHBOURING BOULDERS FOR THE BOULDER SIZE USED AND SO THAT WATER FLOWING BETWEEN TWO BOULDERS IS BLOCKED IMMEDIATELY DOWNSTREAM BY A THIRD BOULDER. IN THIS WAY MAXIMUM ROUGHNESS IS ACHIEVED ON THE RAMP.

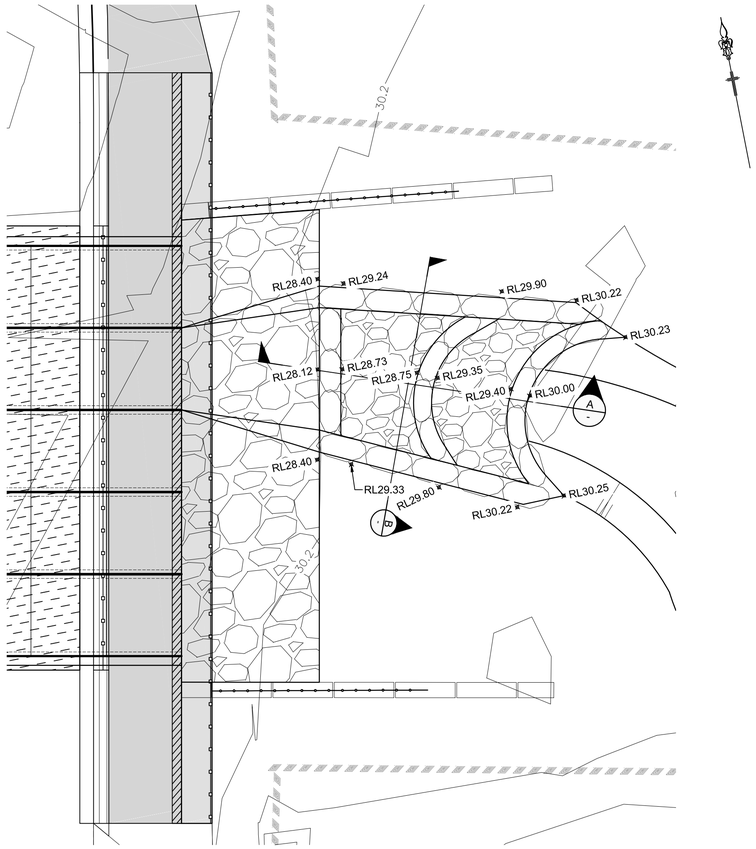
HOLES BETWEEN THE BOULDERS ARE FILLED BY DROPPING STONES INTO THEM AND LOCKING THEM IN WITH A CROW BAR. DO NOT USE CONCRETE ANYWHERE ON THE RAMP BECAUSE OF THE DANGER OF UNEVEN SETTLEMENT. THE BOULDERS ARE TO BE MACHINE PLACED ONLY AND THE RAMP IS NOT TO BE CONSTRUCTED BY ROCKFILL AS THIS EFFECTS THE STABILITY AND ROUGHNESS OF THE RAMP.

ROCK GRADATION SUMMARY

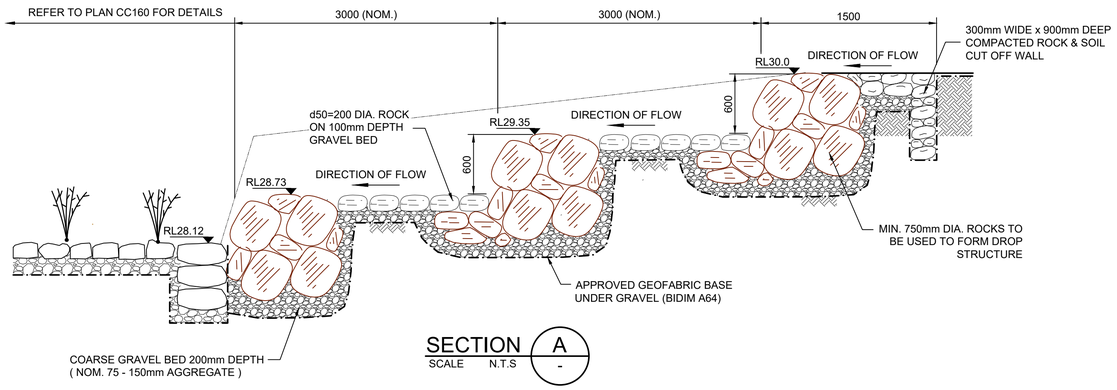
EQUIVALENT SPHERICAL DIAMETER *	PERCENT (BY WEIGHT) OF ROCK OF SMALLER SIZE
1.5 - 2.0 TIMES D50**	100%
D50	50%
0.3D50	10 - 20%

* THE DIAMETER OF A SPHERE WITH AN EQUIVALENT VOLUME TO THE INDIVIDUAL ROCK.

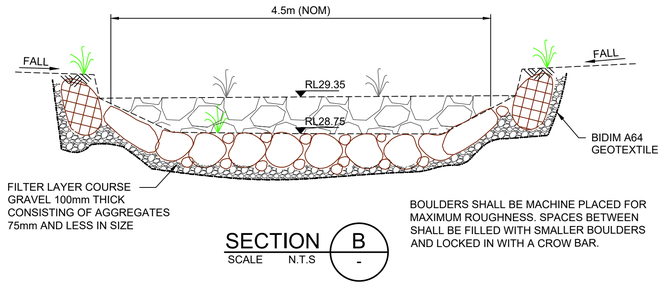
** D50 IS THE MEAN RIPRAP DIAMETER OF THE ROCK MIX



DROP STRUCTURE PLAN
SCALE 1:100



SECTION A
SCALE N.T.S



SECTION B
SCALE N.T.S

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

CLIENT:

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B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
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	AMENDMENT	DES	DRN	CKD	APR	DATE

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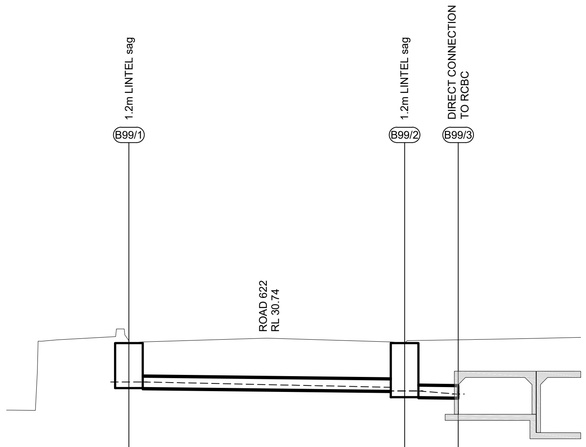
AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
CULVERT CROSSING ML1.19
DROP STRUCTURE PLAN AND DETAILS

PLAN No: 11035005/CC161 B
FILE No: 11035005CC161
SHEET SIZE: A1 ORIGINAL

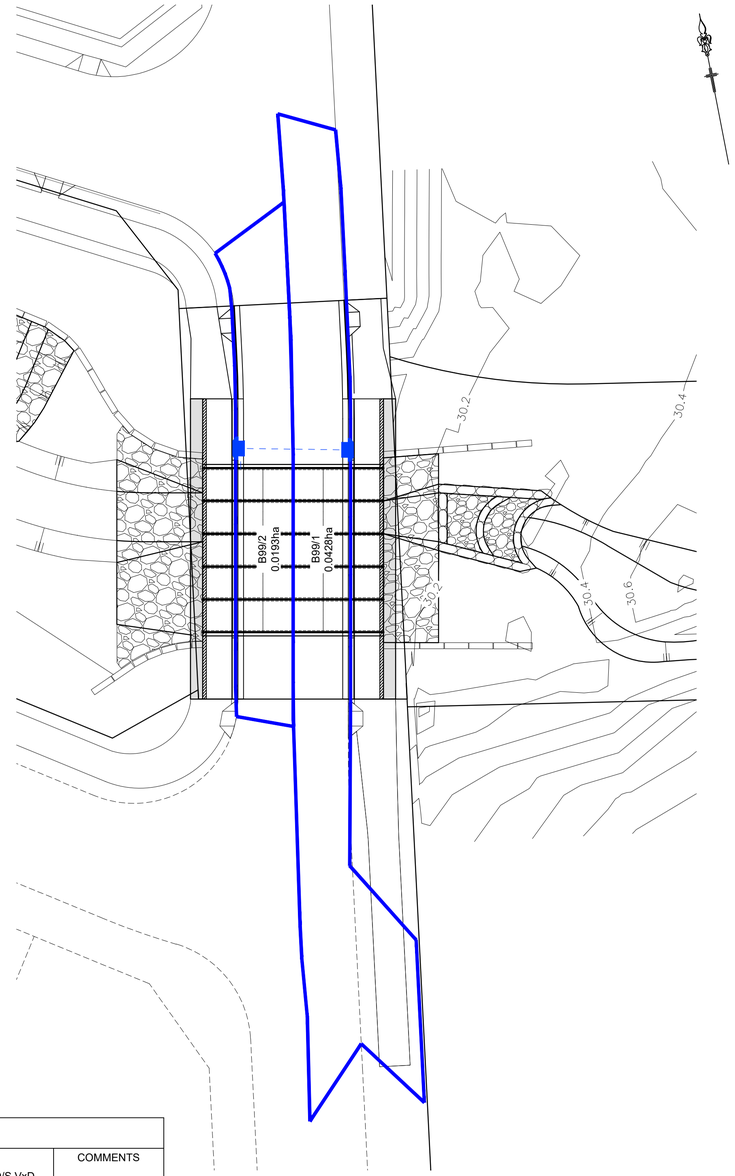
Plotted: 27 November , 2018 10:32:46 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC161.dwg



	B99/1	B99/2	B99/3
DATUM (m)	23.00		
PEAK FLOW (L/s)	15	21	
PIPE SIZE (mm)	375	375	
PIPE CLASS	RRJ2	RRJ2	
PIPE GRADE (%)	1.0	1.0	
PIPE COVER MINIMUM	1.10	0.98	
FULL PIPE VELOCITY (m/s)	0.74	0.75	
HGL GRADE (%)	1.4	4.36	
WAE			
HYDRAULIC GRADE LINE	29.24	29.12 / 28.96	28.88
INVERT LEVEL	29.14	29.04 / 28.82	28.80 / 28.80
DESIGN SURFACE LEVEL	30.58	30.58	29.18
ROAD CHAINAGE	737.08	737.20	735.45
PIPE CHAINAGE	0.00	9.00	10.75

LINE B99

SCALE 1:100



CATCHMENT PLAN

SCALE 1:250

PIT SCHEDULE

PIT NAME (-)	PIT TYPE (-)	PIT EASTING (m)	PIT NORTHING (m)	PIT DEPTH (m)	COMMENTS
B99/1	1.8 m lintel sag	297696.168	6268333.682	1.451	
B99/2	1.8 m lintel sag	297687.356	6268335.516	1.768	
B99/3	D.C	297687.002	6268333.802	0.375	DIRECT CONNECTION TO RCBC

DESIGN STORM 1:10yr ARI HYDROLOGIC RESULTS

PIT NAME (-)	PIT TYPE (-)	CATCHMENT AREA (Ha)	PERCENT IMPERVIOUS (%)	Tc IMP (min)	Tc PERV (min)	CRITICAL STORM (min)	APPROACH FLOW (L/s)	CAPTURED FLOW (L/s)	UNCAPTURED FLOW (L/s)	GRATE DEPTH (mm)	ROAD GRADE (%)	ROAD CROSSFALL (%)	BYPASS PIT (-)	BYPASS CHANNEL FLOW (L/s)	U/S FLOW WIDTH (m)	U/S VxD (m/s^2)	D/S FLOW WIDTH (m)	D/S VxD (m/s^2)	COMMENTS (-)
B99/1	1.8 m lintel sag	0.043	95	5	5		15	15	0	33	0.1	3	B99/2	0					
B99/2	1.8 m lintel sag		0	5	5		7	6	1	18	0.1	3	LOST	1	0.22		0.21		
B99/3	D.C						0	0	0	0									
BP30/1	BYPASS NODE	0.019	85	5	5	5	7	0	0	60	0.7	3	B99/2	7	1.14	0.02	0.82	0.02	

DESIGN STORM 1:10yr ARI HYDRAULIC RESULTS

PIPE NAME (-)	PIPE DIAMETER (mm)	PIPE TYPE (-)	PIPE LENGTH (m)	PIPE GRADE (%)	CRITICAL STORM (min)	PEAK FLOW (L/s)	CAPACITY RATIO (-)	PEAK VELOCITY (m/s)	PIPE U/S IL (m)	PIPE D/S IL (m)	PIPE D/S DROP (m)	U/S PIT Ku (-)	D/S PIT Kw (-)	PIT LOSS (Ku.V'head) (m)	WSE LOSS (Kw.V'head) (m)	U/S PIPE HGL (m)	D/S PIPE HGL (m)	HGL GRADE (%)	MINIMUM COVER (m)	MINIMUM FREEBOARD (m)	COMMENTS
B99/1 to B99/2	375	RRJ2	9	1	25	15	0.08	0.74	29.135	29.045	0.228	4.5	4.5	0.13	0.13	29.242	29.116	1.4	1.1	1.34	
B99/2 to B99/3	375	RRJ2	1.67	1	25	21	0.11	0.75	28.817	28.8	0.05	2.21	2.65	0.06	0.08	28.957	28.884	4.36	0.98	1.625	

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
A	ISSUED FOR CONSTRUCTION APPROVAL	RT	NDW	MS		13/06/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
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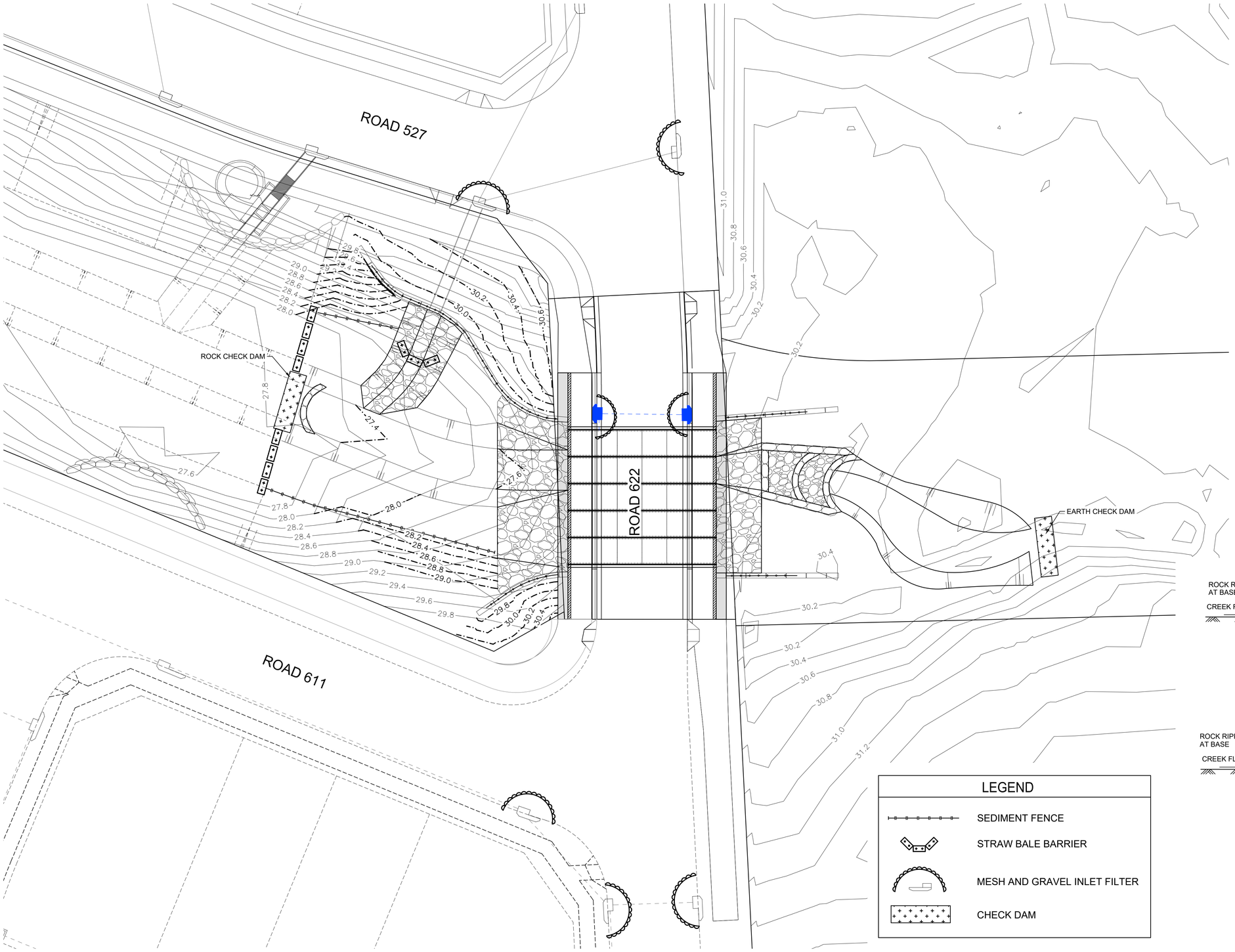
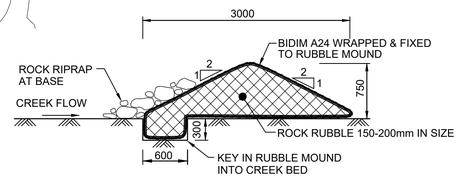
ELARA S94 WORKS
CULVERT CROSSING ML1.19
STORMWATER DETAILS

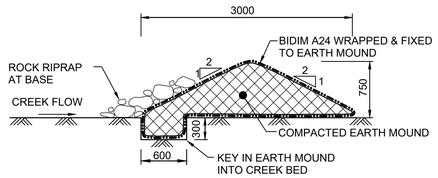
PLAN No: 11035005/CC162 B
FILE No: 11035005CC162
SHEET SIZE: A1 ORIGINAL

Plotted: 27 November , 2018 10:10:26 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC162.dwg





RUBBLE & GEOFABRIC CHECK DAM DETAIL



COMPACTED EARTH & GEOFABRIC CHECK DAM DETAIL
NTS

LEGEND

- SEDIMENT FENCE
- STRAW BALE BARRIER
- MESH AND GRAVEL INLET FILTER
- CHECK DAM

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

CLIENT: Stockland

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ELARA S94 WORKS
CULVERT CROSSING ML1.19
SOIL & WATER MANAGEMENT PLAN

PLAN No: 11035005/CC163 B
FILE No: 11035005CC163
SHEET SIZE: A1 ORIGINAL

AZIMUTH:
DATUM:
ORIGIN:

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B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
A	ISSUED FOR CONSTRUCTION APPROVAL	RT	NDW	MS		13/06/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

Plotted: 27 November , 2018 10:10:48 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC163.dwg

SOIL AND WATER MANAGEMENT NOTES

GENERAL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE BLACKTOWN CITY COUNCIL.

2. BULK EARHWORKS ARE TO BE UNDERTAKEN IN STAGES. THE CONTRACTOR IS TO PREPARE A STAGING PLAN WHICH IS TO BE SUBMITTED TO THE PCA PRIOR TO THE COMMENCEMENT OF WORKS.

3. TOPSOIL FROM ALL AREAS TO BE DISTURBED SHALL BE STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN THOSE AREAS.

4. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILIZED AS EARLY AS POSSIBLE DURING DEVELOPMENT.

5. ALL TAIL-OUT DRAINS SHALL BE COUCH GRASSED AND TRAPEZOIDAL IN SECTION. STRAW BALES SHALL BE PLACED AS A SEDIMENT CONTROL DEVICE WHERE REQUIRED.

6. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING DEVELOPMENT CONFINING ACCESS WHERE POSSIBLE TO PROPOSED OR EXISTING ROAD ALIGNMENTS. AREAS TO BE LEFT UNDISTURBED SHALL BE MARKED OFF.

7. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.

8. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM 60% FULL OF SOLID MATERIALS, INCLUDING DURING THE MAINTENANCE PERIOD.

9. THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.

10. CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" ("THE BLUE BOOK").

11. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.

12. THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (PREF 2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES - WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDENTIFIED WITH BARRIER FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 10m	THE SITE MANAGER SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES. WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION.

NOTE:
WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED - ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE C-FACTORS BELOW 0.05 FROM 1st JANUARY TO 15th MAY USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

13. GENERALLY WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE AND WILL BE DETAILED IN THE CONSTRUCTION CERTIFICATE DRAWINGS. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:-

    a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE CC PLANS AND TO DETAIL(SD) 6-7.
    b. CONSTRUCT STABILISED SITE ACCESS AS SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-7.
    c. CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-3.
    d. PROVIDE TEMPORARY ACCESS TO THE SEDIMENT BASIN(S)AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6-7 OR BARRIER FENCING AND EARTH BANKS (SD) 5-2.
    e. PLACE SEDIMENT FENCING (SD) 6-7 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.
    f. CONSTRUCT SEDIMENT BASIN(S) GENERALLY IN ACCORDANCE WITH (SD) 6-4
    g. STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASIN(S) AS SOON AS FINAL LEVELS ARE ESTABLISHED
    h. CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE CC PLANS OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD) 4-1.
    i. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS.
    j. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
    k. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

14. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE

15. EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER THAN:-

    a. 2(h) - 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
    b. 2.5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
    c. 3(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
    d. 4(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
    e. 5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
    f. 6(h) - 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

    SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

16. PROTECTION FROM EROSIVE FORCES SHALL BE UNDERTAKEN ON ALL LANDS TO MEET THE REQUIREMENTS OF TABLE J3-3 "MAXIMUM ACCEPTABLE C-FACTORS AT NOMINATED TIMES DURING WORKS" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION"

17. TEMPORARY GROUND COVER IN SHEET FLOW AREAS IS TO BE IN ACCORDANCE WITH TABLE J3-4 "PLANT SPECIES FOR GROUND COVER" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" WHERE PRACTICAL FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATED AREAS

18. WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO BE SCHEDULED SO THAT THE TIME FROM STARTING LAND DISTURBANCE ACTIVITIES TO STABILISATION IS A DURATION OF LESS THAN 6 MONTHS - THIS MEANS ACHIEVING A C-FACTOR OF LESS THAN 0.1 AND SETTING IN MOTION A PROGRAM THAT ENSURES THAT IT DROPS PERMANENTLY, (BY VEGETATION, PAVING, ARMOURING etc.) TO LESS THAN 0.05 WITHIN A FURTHER 60 DAYS. LOCAL WATER RESTRICTIONS PERMITTING, LANDS THAT HAVE BEEN NEWLY PLANTED WITH GRASS SPECIES SHALL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER HAS BEEN ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER SHALL BE APPLIED AS NECESSARY IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE VEGETATIVE PROTECTION. NOTWITHSTANDING THIS SCHEDULE WORKS SO THAT THE DURATION FROM THE CONCLUSION OF LAND SHAPING TO THE COMPLETION OF FINAL STABILISATION IS LESS THAN 20 WORKING DAYS.

19. SEDIMENT FENCES (SD) 6-7 SHALL:-

    a. BE INSTALLED WHERE SHOWN ON THE CC PLANS AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
    b. HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m, AND A STORAGE DEPTH OF AT LEAST 0.6m.
    c. PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHMENT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 40litres/sec IN A MAX. 20yr Tc DISCHARGE.

20. STOCKPILES (SD) 4-1 SHALL BE LOCATED AS SHOWN ON THE CC PLANS AND AT THE DISCRETION OF THE SITE SUPERINTENDENT.

21. DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDANTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.

22. NOTWITHSTANDING NOTE 21 STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.

23. THE SEDIMENT RETENTION BASINS (SD) 6-4 SHALL:-

    a. BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
    b. BE FLOCCULATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
    c. HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.

24. STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:-

    a. LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
    b. THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
    c. THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT
    d. DISCHARGING SEDIMENT FROM THE SITE.

25. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR.

26. WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD) 6-8 & 6-9.

27. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED.

28. ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

STOCKPILE NOTES:

1. SPOIL AN TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREAS WHERE WATER MAY CONCENTRATE.

2. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 14 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.

3. FOLLOWING CONSTRUCTION, TOPSOIL SHALL BE RESPREAD TO A MINIMUM DEPTH OF 100mm ON THE BARE SOIL SURFACES AND REVEGETATE.

4. PLASTIC SHEETING MUST BE PLACED OVER THE STOCKPILE TO MINIMISE WIND BLOWN DUST.

SEDIMENTATION CONTROL DEVICES:

1. ALL STRAW BALES SHALL BE BOUND WITH WIRE. STRAW BALES SHALL BE PLACED END TO END IN A SINGLE ROW AND EMBEDDED INTO THE SOIL TO A DEPTH OF 100mm. EACH BALE SHALL BE SECURELY ANCHORED WITH TWO STEEL STAKES DRIVEN 450mm INTO THE GROUND AND LOCKED ON THE BALE CENTRELINE.

2. SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG IT'S LOWER EDGE.

3. PROVIDE STRIP OF TURF MIN. 300mm WIDE BEHIND KERB + 1m WIDE AROUND ALL SURFACE INLET PITS

SITE INSPECTION AND MAINTENANCE:

1. A SELF-AUDITING PROGRAM SHALL BE ESTABLISHED BASED ON A CHECK SHEET. A SITE INSPECTION USING THE CHECK SHEET SHALL BE MADE BY THE SITE MANAGER-:

    a. AT LEAST WEEKLY
    b. IMMEDIATELY BEFORE SITE CLOSURE
    c. IMMEDIATELY FOLLOWING RAINFALL EVENTS IN EXCESS OF 5mm IN ANY 24hr PERIOD.

    THE SELF AUDIT SHALL INCLUDE:-

    a. RECORDING THE CONDITION OF EVERY 'BEST MANAGEMENT PRACTICE' EMPLOYED
    b. RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH 'BEST MANAGEMENT PRACTICE'
    c. RECORDING THE VOLUMES OF SEDIMENT REMOVED FROM SEDIMENT RETENTION SYSTEMS WHERE APPLICABLE
    d. RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
    e. FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER FOR THEIR INFORMATION.

2. IN ADDITION A SUITABLY QUALIFIED PERSON SHALL BE RESPONSIBLE FOR OVERSEEING THE INSTALLATION AND MAINTENANCE OF ALL SOIL AND WATER MANAGEMENT WORKS ON THE SITE. THE PERSON SHALL BE REQUIRED TO SPEND A MINIMUM OF:-

    a. 2hrs ONSITE EACH FORTNIGHT UP UNTIL COMPLETION OF ROAD AND DRAINAGE WORKS AND/OR THE COMMISSIONING OF SEDIMENT BASIN(S)/WATER QUALITY CONTROL FACILITIES, AND DURING THE DECOMMISSIONING OF SAME AND/OR FINAL SITE STABILISATION. TO PROVIDE A SHORT MONTHLY WRITTEN REPORT.
    b. ONE HOUR ONSITE EACH 2 MONTHS DURING THAT PHASE WHERE THE DEVELOPERS RESPONSIBILITIES ARE LIMITED TO MAINTENANCE OF THE SDS DEVICES AND/OR SEDIMENT BASINS (ie DURING THE STAGE WHEN BUILDING WORKS CAN BE UNDERTAKEN) TO PROVIDE A SHORT WRITTEN REPORT EACH 4 MONTHS

    THE RESPONSIBLE PERSON SHALL ENSURE THAT:-

    a. THIS PLAN IS BEING IMPLEMENTED CORRECTLY
    b. REPAIRS ARE BEING UNDERTAKEN AS REQUIRED
    c. ESSENTIAL MODIFICATIONS TO THIS PLAN ARE BEING MADE IF AND WHEN NECESSARY EACH REPORT SHALL CERTIFY THAT WORKS HAVE BEEN CARRIED OUT ACCORDING TO THE APPROVED PLANS.

3. WASTE BINS SHALL BE EMPTIED AS NECESSARY, DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT

4. PROPER DRAINAGE OF THE SITE SHALL BE MAINTAINED. TO THIS END DRAINS (INCLUDING INLET AND OUTLET WORKS) SHALL BE CHECKED TO ENSURE THAT THEY ARE OPERATING AS INTENDED,ESPECIALLY THAT:-

    a. NO LOW POINTS EXIST WHICH CAN OVERTOP IN A LARGE STORM EVENT.
    b. AREAS OF EROSION ARE REPAIRED (e.g LINED WITH SUITABLE MATERIAL) AND/OR VELOCITY OF FLOW IS REDUCED APPROPRIATELY THROUGH CONSTRUCTION OF SMALL CHECK DAMS OR INSTALLING ADDITIONAL DIVERSIONS UPSLOPE
    c. BLOCKAGES ARE CLEARED (THESE MIGHT OCCUR BECAUSE OF SEDIMENT POLLUTION, SAND/SOIL/SPOIL BEING DEPOSITED IN OR TOO CLOSE TO THEM, BREACHED BY VEHICLE WHEELS etc)

5. SAND/SOIL/SPOIL MATERIALS PLACED CLOSER THAN 2m FROM HAZARD AREAS SHALL BE REMOVED SUCH HAZARD AREAS INCLUDE ANY AREAS OF HIGH VELOCITY WATER FLOWS (eg WATERWAYS AND GUTTERS) PAVED AREAS AND DRIVEWAYS.

6. RECENTLY STABILISED LANDS SHALL BE CHECKED TO ENSURE THAT THE EROSION HAZARD HAS BEEN EFFECTIVELY REDUCED. ANY REPAIRS SHALL BE INITIATED AS APPROPRIATE.

7. EXCESSIVE VEGETATIVE GROWTH SHALL BE CONTROLLED THROUGH MOWING OR SLASHING.

8. ALL SEDIMENT DETENTION SYSTEMS SHALL BE KEPT IN GOOD WORKING CONDITION. IN PARTICULAR ATTENTION SHALL BE GIVEN TO:-

    a. RECENT WORKS TO ENSURE THAT THEY HAVE NOT RESULTED IN DIVERSION OF SEDIMENT LADEN WATER AWAY FROM THEM.
    b. DEGRADABLE PRODUCTS TO ENSURE THAT THEY ARE REPLACED AS REQUIRED
    c. SEDIMENT REMOVAL TO ENSURE THE DESIGN CAPACITY OR LESS REMAINS IN THE SETTLING ZONE.

9. ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS SHALL BE CONSTRUCTED AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS (ie MAKE ONGOING CHANGES TO THIS PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS AT THE WORKS SITE OR ELSEWHERE IN THE CATCHMENT.

10. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN A FUNCTIONING CONDITION UNTIL ALL EARTHWORKS ACTIVITIES ARE COMPLETED AND THE SITE STABILISED.

11. WATERS IN SEDIMENT RETENTION BASIN(S) THAT OCCUPY MORE THAN 1/4 OF THE DESIGN CAPACITY DURING THAT STAGE OF THE WORKS UP UNTIL COMMISSIONING OF THE BASIN(s) SHALL BE:-

    a. TREATED WITH A FLOCCULATING AGENT (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.)
    b. DISCHARGED WITHIN 5 days FROM THE CONCLUSION OF ANY STORM EVENT LARGE ENOUGH TO FILL THE BASIN TO THAT LEVEL.

12. LITTER, DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM THE GROSS POLLUTANT TRAPS AND TRASH RACKS AS REQUIRED.

B	ISSED FOR CONSTRUCTION APPROVAL	PS	UF	AM	MS	27/11/18
A	ISSUED FOR CONSTRUCTION APPROVAL	RT	NDW	MS		13/06/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CULVERT CROSSING ML1.19
SOIL & WATER MANAGEMENT NOTES

PLAN No: 11035005/CC164 B
FILE No: 11035005CC164
SHEET SIZE: A1 ORIGINAL

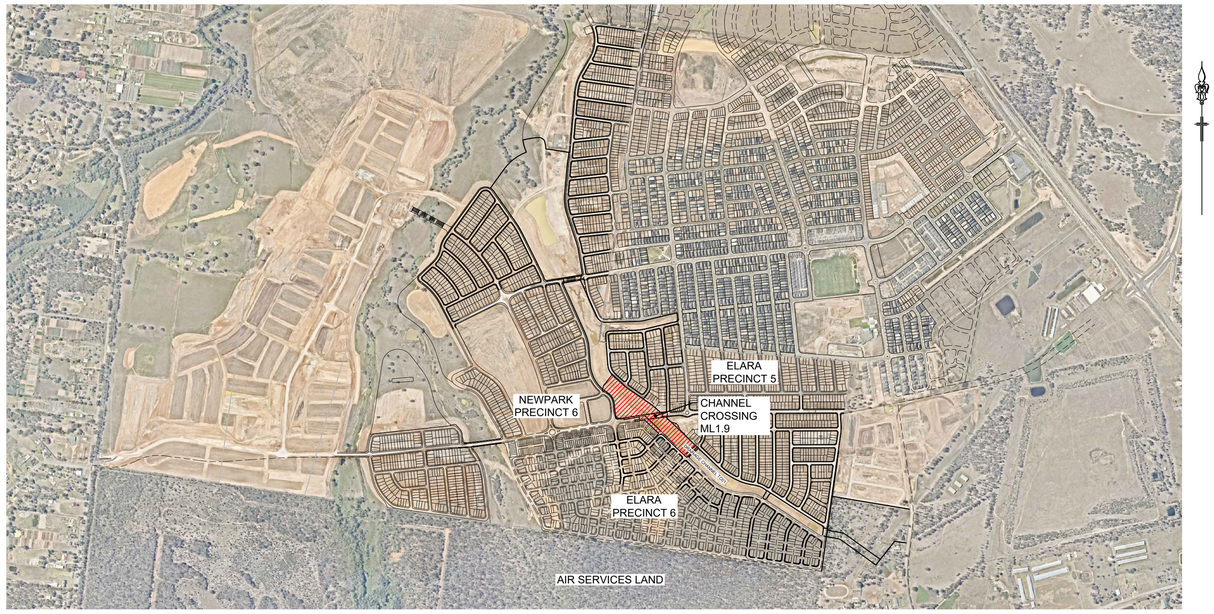
Plotted: 27 November , 2018 10:06:57 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\03_Culvert 1 ML1_19\11035005CC164.dwg

Stockland

ELARA - ABELL ROAD CULVERT CROSSING
SECTION 7.11 CONSTRUCTION CERTIFICATE

CONTRIBUTION PLAN No.21, ITEMS ML1.9, MP10.7, ML 1.12 AND PARTS ML1.7 & ML1.15

COUNCIL REFERENCE: DA-18-00400



LOCALITY SKETCH

Prepared By:

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300
W www.jwprince.com.au
E jwp@jwprince.com.au

ISSUED FOR CONSTRUCTION APPROVAL

PLAN No. 11035005/CC250 B

FILE No. 11035005CC250

Plotted: October 16, 2018 File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC250.dwg

LEGEND

DESCRIPTION	PROPOSED	EXISTING	FUTURE
EXTENT OF WORKS			
KERB & GUTTER	K&G		
ROLL KERB	RK		
DISH CROSSING	DC		
PRAM RAMP			
DRAINAGE LINE, PIT & EASEMENT	05/05 Ø225		
DRAINAGE LINE & PIT	05/06 Ø600		
SUBSOIL DRAINAGE	SS SS		
HEADWALL			
CONTOURS	46.0	47.0	
CATCH DRAIN			
ELECTRICITY, POWER POLE	E E E E	eE eE FP eE	
TELECOM, BOX	T T T T	eT eT eT eT	
WATER, STOP VALVE, HYDRANT	W W W W	eW eW HYD eW SV eW	
SEWER, MANHOLE	S S S S	eS eS SMH	
GAS	G G G G	eG eG eG	
STABILISED SITE ACCESS			
SEDIMENT FENCE			
STRAW BALE BARRIER			
STOCKPILE	SP		
PROTECTIVE FENCING			
MESH AND GRAVEL INLET FILTER			
GEOTEXTILE INLET FILTER			
CATCHMENT BOUNDARY			
FLOW DIRECTION ARROW			
FLOOD PLANNING EVENT			
FLOOD PLANNING EVENT CONTOUR	52.5		

NOTES UPDATED
B

CIVIL PLAN INDEX

PLAN NO.	PLAN NAME	REV.
11035005/CC250	COVER SHEET	B
11035005/CC251	GENERAL NOTES, LEGEND & INDEX	B
11035005/CC252	OVERALL ARRANGEMENT PLAN	B
11035005/CC253	SETOUT PLAN SHEET 1	B
11035005/CC254	SETOUT PLAN SHEET 2	B
11035005/CC255	SETOUT TABLES AND FOOTPATH DETAILS	B
11035005/CC256	PAVEMENT AND GROUND COVER PLAN	B
11035005/CC257	ENGINEERING PLAN SHEET 1	B
11035005/CC258	ENGINEERING PLAN SHEET 2	B
11035005/CC259	ENGINEERING PLAN SHEET 3	B
11035005/CC260	CULVERT DETAIL PLAN	C
11035005/CC261	ABELL ROAD LONGITUDINAL SECTIONS ROCK WALL & SAFETY BARRIER DETAIL	B
11035005/CC262	HEADWALL SECTIONS	B
11035005/CC263	RETAINING WALL LONGITUDINAL SECTIONS SHEET 1	B
11035005/CC264	RETAINING WALL LONGITUDINAL SECTIONS SHEET 2	B
11035005/CC265	CULVERT SECTIONS	B
11035005/CC266	REACH 3 LONGITUDINAL SECTION	B
11035005/CC267	REACH 4 LONGITUDINAL SECTION	B
11035005/CC268	TYPICAL ROAD CROSS SECTIONS	B
11035005/CC269	FOOTPATH LONGITUDINAL SECTIONS SHEET 1	B
11035005/CC270	FOOTPATH LONGITUDINAL SECTIONS SHEET 2	B
11035005/CC271	FOOTPATH LONGITUDINAL SECTIONS SHEET 3	B
11035005/CC272	FOOTPATH LONGITUDINAL SECTIONS SHEET 4	B
11035005/CC273	CUT/FILL PLAN SHEET 1	B
11035005/CC274	CUT/FILL PLAN SHEET 2	B
11035005/CC275	DETAIL SECTIONS SHEET 1	B
11035005/CC276	DETAIL SECTIONS SHEET 2	B
11035005/CC277	SITE SECTIONS PLAN SHEET 1	B
11035005/CC278	SITE SECTIONS PLAN SHEET 2	B
11035005/CC279	SITE SECTIONS SHEET 1	B
11035005/CC280	SITE SECTIONS SHEET 2	B
11035005/CC281	SITE SECTIONS SHEET 3	B
11035005/CC282	SITE SECTIONS SHEET 4	B
11035005/CC283	SITE SECTIONS SHEET 5	B
11035005/CC284	SITE SECTIONS SHEET 6	B
11035005/CC285	SITE SECTIONS SHEET 7	B
11035005/CC286	SITE SECTIONS SHEET 8	B
11035005/CC287	STORMWATER DETAILS	B
11035005/CC288	SOIL & WATER MANAGEMENT PLAN SHEET 1	B
11035005/CC289	SOIL & WATER MANAGEMENT PLAN SHEET 2	B
11035005/CC290	SOIL & WATER MANAGEMENT PLAN SHEET 3	B
11035005/CC291	SOIL & WATER MANAGEMENT NOTES	B
11035005/CC292	TURNING PATHS SHEET 1	B
11035005/CC293	TURNING PATHS SHEET 2	B
11035005/CC294	SIGNAGE & LINEMARKING SHEET 1	B
11035005/CC295	SIGNAGE & LINEMARKING SHEET 2	B
11035005/CC296	SIGNAGE & LINEMARKING SHEET 3	B
11035005/CC297	PEDESTRIAN ISLAND SETOUT PLAN	B

CONTRIBUTIONS PLAN (NO.21) ITEMS INCLUDED IN THIS APPLICATION

SITE NO.	DESCRIPTION
ML 1.9	CULVERT CROSSING
MP 10.7	COLLECTOR ROAD - FULL WIDTH CROSSING
ML1.12	LANDSCAPED OPEN CHANNEL
ML1.7	LANDSCAPED OPEN CHANNEL - PART
ML1.15	LANDSCAPED OPEN CHANNEL - PART

GENERAL NOTES

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S "WORKS SPECIFICATION - CIVIL 2005".
2. SURVEY MARKS: -
   a. SURVEY MARKS SHOWN SHALL BE RETAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE SUPERINTENDENT MUST BE NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL.
3. THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
4. THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE OWNERS. TO BE PROVIDED PRIOR TO THE APPROVAL OF THE PLANS.
5. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJOINING PROPERTIES.
6. COUNCIL'S TREE PRESERVATION ORDER MUST BE OBSERVED AND NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT THE PRIOR APPROVAL OF COUNCIL'S ENGINEER.
7. TREES TO BE RETAINED ON SITE SHALL BE PROTECTED BY SUITABLE STURDY APPROVED PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF SITE WORKS.
8. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES, OUT-HOUSES, CAR BODIES AND DEBRIS ETC.
9. FILLING IS TO BE FROM A NOMINATED SOURCE, OF SOUND CLEAN MATERIAL, FREE FROM LARGE ROCK, STUMPS, CONTAMINATED MATTER, INDUSTRIAL AND BUILDING WASTE, ORGANIC MATTER AND OTHER DEBRIS. PLACING OF FILLING ON THE PREPARED AREAS SHALL NOT COMMENCE UNTIL THE AUTHORITY TO DO SO HAS BEEN OBTAINED FROM THE COUNCIL.
10. THE FILL MATERIAL THAT MAY BE RECEIVED AT THE DEVELOPMENT SITE ARE EXCAVATED NATURAL MATERIALS (VENM) AND EXCAVATED NATURAL MATERIAL (ENM) WITHIN THE MEANING OF THE PROTECTION OF THE ENVIRONMENTAL OPERATIONS ACT1997.
11. SITE FILL AREAS: - THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
12. ALL SITE FILLING TO BE COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY A REGISTERED SOIL LABORATORY IN ACCORDANCE WITH COUNCIL'S "WORKS SPECIFICATION".
13. ALL SITE REGRADING AREAS SHALL BE GRADED AT A MINIMUM 1% TO THE ENGINEER'S REQUIREMENTS.
14. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED BY THE SUPERINTENDENT.
15. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS.
16. DIMENSIONS OF ANY DETAIL SHALL NOT BE SCALED - DIMENSIONS, IF IN DOUBT, SHALL BE VERIFIED BY THE SUPERINTENDENT.
17. ALL CONSTRUCTION AND RESTORATION WORK ON COUNCIL'S ROAD AND FOOTPATH AREA ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS AND COUNCIL'S STANDARD SPECIFICATIONS.
18. ALL WORKS TO BE IN ACCORDANCE WITH THE SALINITY MANAGEMENT PLAN BY GEOTECH TESTING PTY LTD 8537/2-AA
19. ALL STREET NAME POLES AND LIGHT POLES SHALL BE BLACK POWDER COATED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S ENGINEERING GUIDE FOR DEVELOPMENT.

SURFACE NOTES

1. BATTER SLOPES ARE TYPICALLY 1v:4h UNLESS NOTED OTHER WISE.

SURVEY SET OUT INFORMATION NOTES:

1. ALL SITE SET OUT AND CONTROL POINTS ARE TO BE CERTIFIED BY A REGISTERED SURVEYOR.
2. THE INFORMATION DETAILED ON THE CERTIFIED CONSTRUCTION CERTIFICATE PLANS TAKES PRECEDENCE OVER ALL ELECTRONIC INFORMATION PROVIDED. THE ORDER OF PRIORITY FOR USE OF ALL INFORMATION PROVIDED IS AS FOLLOWS:
   a. CERTIFIED CONSTRUCTION CERTIFICATE DRAWINGS
   b. 2D DRAFTING BASE (ELECTRONIC FILE)
   c. 3D DTM (ELECTRONIC FILE)
3. ANY DISCREPANCY BETWEEN ANY OF THE INFORMATION CONTAINED WITHIN THESE FILES IS TO BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT PRIOR TO CONSTRUCTION WHO WILL SEEK CLARIFICATION AND ISSUE INSTRUCTIONS ON THE APPROPRIATE COURSE OF ACTION.

STORMWATER NOTES

1. STORMWATER DESIGN CRITERIA:

   ANNUAL EXCEEDANCE PROBABILITY:
   1% MAJOR SYSTEM
   10% MINOR SYSTEM
2. PIPES TO BE INSTALLED TO TYPE HS2 SUPPORT IN ACCORDANCE WITH AS 3725 (1989) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 300mm LAYERS TO MINIMUM 100% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
3. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
4. GRATES AND COVERS SHALL CONFORM TO AS 3996.
5. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
6. DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH NON-COHESIVE SAND AND HAVE 3m OF SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK, DISCHARGING INTO DOWN STREAM PITS. FOR PIPELINES GREATER THAN 525Ø, SUBSOIL DRAIN SHALL BE PROVIDED ON BOTH SIDES OF THE TRENCH.
7. ALL STORMWATER PIPES WITHIN ROADS TO BE REINFORCED CONCRETE PIPE (RRJ) CLASS 2 OR FRC CLASS 2 UNLESS NOTED OTHERWISE.
8. DRAINAGE LINES ON PLANS ARE DIAGRAMMATIC ONLY AND PIPE CENTRELINES SHALL ENTER AND EXIT PITS AT THE CENTRE OF THE RESPECTIVE PIT WALLS.
9. STEP IRONS REQUIRED WHERE THE PIT EXCEEDS 1200 IN DEPTH. REFER TO COUNCIL DRAWING A(BS)107M.

NOTE:
THESE PLANS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING
- THE ELARA SECTION 94 DETAILED CONCEPT PLANS BY J.WYNDHAM PRINCE 11035005/DC01 - 72
- LANDSCAPED CHANNEL TC01 PART 1 1 ML 1.15, ML1.18 REFER TO J.WYNDHAM PRINCE 11035005/CC300-CC336
- LANDSCAPED CHANNEL TC01 PART 2 2 ML 1.17, REFER TO J.WYNDHAM PRINCE 11035005/CC350-CC382
- LANDSCAPE PLANS BY PATERSON DESIGN STUDIO

SURVEYED BY:
BMD BULK EARTHWORKS SURFACE
CAD REFERENCE: tin BEW 171214.12daz
DATE RECEIVED: 29/01/2018

CRAIG & RHODES DRONE SURVEY
CAD REFERENCE: 20180213_C&R_MARSDEN-PARK_ELEVATION.dwg
DATE RECEIVED: 22/02/2018

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UTILITIES SHOWN ARE DIAGRAMMATIC ONLY, CONTRACTORS ARE RESPONSIBLE TO LOCATE AND AVOID DAMAGE TO THEM AS SPECIFIED BY EACH UTILITIES EXCAVATION GUIDE LINES & STANDARDS.

NOTE: UTILITIES SHOWN MAY NOT INCLUDE ALL SERVICES WITHIN THE LIMIT OF WORKS

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
GENERAL NOTES, LEGEND & INDEX

PLAN No: 11035005/CC251 B
FILE No: 11035005CC251
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:55:17 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC251.dwg

EXISTING ELARA
PRECINT 5 DEVELOPMENT
REFER TO J. WYNDHAM PRINCE PLANS
STAGE 41 110350/CC500-583

EXISTING ELARA
PRECINT 5 DEVELOPMENT
REFER TO J. WYNDHAM PRINCE PLANS
STAGE 42 110350/CC600-693

FUTURE SECTION 7.11
DRAINAGE CHANNEL
REFER TO J. WYNDHAM PRINCE PLANS
TC01 - PART 2 110350/CC350-382

FUTURE SECTION 7.11
DRAINAGE CHANNEL
REFER TO J. WYNDHAM PRINCE PLANS
TC01 - PART 1 110350/CC300-336

FUTURE ELARA
PRECINT 6 DEVELOPMENT
REFER TO J. WYNDHAM PRINCE
PLANS STAGE 45 110350/CC100-132

NEWPARK
PRECINT 6

ROAD 54
ROAD 513
ROAD 527
ROAD 611
ROAD C3
ABELL ROAD
TC01 REACH 3
TC01 REACH 4
CC257
CC258
CC259

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
OVERALL ARRANGEMENT PLAN

PLAN No: 11035005/CC252 B
FILE No: 11035005CC252
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:55:34 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC252.dwg

ELARA
PRECINCT 5
STAGE 41

ROAD 513

REACH 4 FP4

REACH 4 PP5

RETAINING WALL 2

RETAINING WALL 3

HEADWALL 2

HEADWALL 1

TC01 REACH 4

TC01 REACH 3

RETAINING WALL 4

REACH 3 FP3

RETAINING WALL 5

REACH 4 ACCESS 1

RETAINING WALL 1

ABELL ROAD

ROAD C3

NEWPARK
PRECINCT 6

FUTURE
ELARA
PRECINCT 6

REFER TO DRAWING CC254 FOR CONTINUATION

NOTE:
REFER TO CC261 FOR RETAINING WALL SETOUT DETAILS

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

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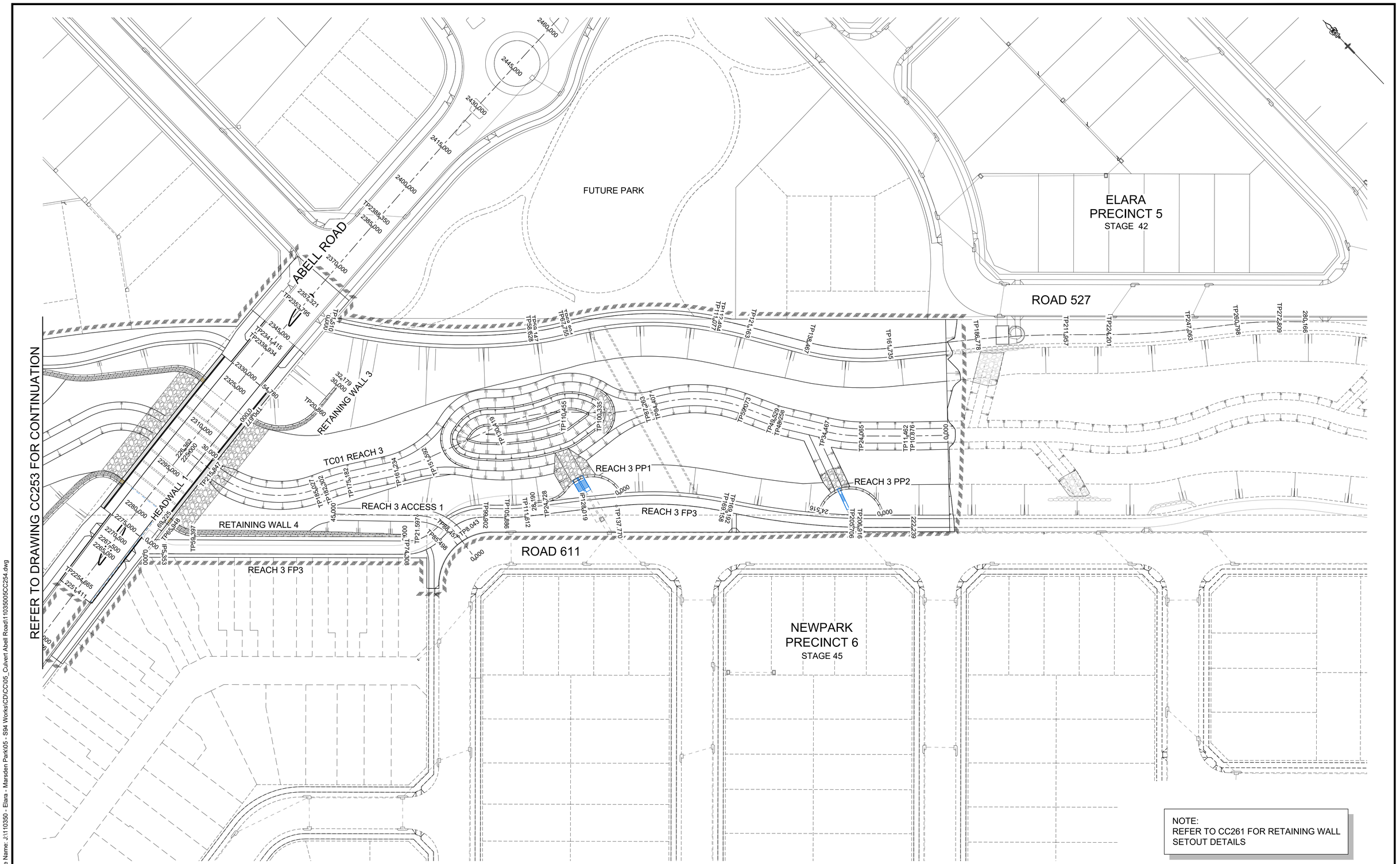
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SETOUT PLAN
SHEET 1

PLAN No: 11035005/CC253 B
FILE No: 11035005CC253
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:55:58 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC253.dwg



NOTE:
REFER TO CC261 FOR RETAINING WALL SETOUT DETAILS

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SETOUT PLAN
SHEET 2

PLAN No: 11035005/CC254 B
FILE No: 11035005CC254
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:56:21 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC254.dwg

REACH 4 ACCESS 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296879.08	6268792	350°49'03.15"		
5.76	296878.16	6268797.68	350°49'03.15"		
9.51	296877.47	6268801.95		-6	7.5
13.26	296873.2	6268802.65	279°12'36.88"		
29.49	296857.17	6268805.24	279°12'36.88"		
40.2	296845.46	6268807.14		20	21.42
50.91	296841.51	6268818.33	340°34'26.09"		
53.88	296840.52	6268821.14		40	5.95
56.86	296839.96	6268824.07	349°05'28.63"		
60.15	296839.33	6268827.3	349°05'28.63"		
68.37	296837.77	6268835.4		80	16.44
76.59	296837.9	6268843.65	0°51'58.12"		
77.52	296837.91	6268844.58	0°51'58.12"		
81.11	296837.97	6268848.67		6	7.17
84.7	296841.8	6268850.11	69°22'29.94"		
88.28	296845.62	6268851.55		6	7.17
91.87	296848.36	6268848.52	137°53'01.76"		
105.65	296857.6	6268838.3	137°53'01.76"		
127.26	296873.45	6268820.76		-43	43.22
148.87	296896.75	6268824.75	80°17'22.47"		
151.31	296899.16	6268825.16	80°17'22.47"		
154.55	296902.93	6268825.81		-4.8	6.47
157.78	296903.14	6268829.63	3°04'20.25"		
161.02	296903.35	6268833.46		-4.8	6.47
164.25	296899.66	6268834.51	285°51'18.03"		
176.73	296887.65	6268837.92	285°51'18.03"		
190.02	296874.38	6268841.69		40	26.57
203.3	296866.25	6268852.84	323°55'03.76"		
217.77	296857.74	6268864.53	323°55'03.76"		
218.2	296857.48	6268864.88		-50	0.87
218.63	296857.22	6268865.22	322°55'26.51"		
235.02	296847.34	6268878.29	322°55'26.51"		
247.16	296839.96	6268888.07		-75	24.29
259.3	296829.85	6268894.98	304°22'17.72"		
268.91	296821.92	6268900.41	304°22'17.72"		
275.01	296816.87	6268903.86		-100	12.2
281.11	296811.45	6268906.67	297°22'53.41"		
293.06	296800.84	6268912.16	297°22'53.41"		
299.99	296793.46	6268915.98		-10	13.87
306.93	296788.35	6268909.42	217°53'54.97"		
312.09	296785.19	6268905.35	217°53'54.97"		

REACH 3 ACCESS 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297022.91	6268723.85	6°31'00.25"		
8.04	297023.82	6268731.85	6°31'00.25"		
14.82	297024.64	6268739.08		-15	13.55
21.6	297019.47	6268744.2	314°44'38.06"		
45	297002.85	6268760.68	314°44'38.06"		

REACH 4 FP4

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296927.34	6268888.03	124°44'00.10"		
3.36	296930.1	6268886.11			
32.73	296954.22	6268869.35	124°48'15.47"		
36.42	296957.25	6268867.24		40	7.38
40.11	296959.85	6268864.6	135°22'10.04"		
59.35	296973.37	6268850.91	135°22'10.04"		
66.67	296978.55	6268845.67		-50	14.64
73.99	296985.02	6268842.14	118°35'41.95"		
88.63	296997.87	6268835.13	118°35'41.95"		
92.76	297001.52	6268833.15		40	8.27
96.89	297004.67	6268830.46	130°26'02.65"		
103.85	297009.97	6268825.95	130°26'02.65"		
109.81	297014.72	6268821.89		16	11.92
115.77	297015.47	6268815.68	173°07'06.67"		
118.34	297015.78	6268813.13	173°07'06.67"		

REACH 3 FP1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297039.34	6268802.52	147°14'19.18"		
1.51	297040.16	6268801.26	147°14'19.18"		
30.07	297055.78	6268776.99		-161.5	57.12
58.63	297078.84	6268759.63	126°58'28.83"		
59.15	297079.25	6268759.31	126°58'28.83"		
63.45	297082.69	6268756.72		-60	8.61
67.75	297086.47	6268754.65	118°45'16.95"		
68.89	297087.47	6268754.1	118°45'16.95"		
89.99	297106.27	6268743.78		95	42.18
111.08	297118.82	6268726.39	144°11'45.60"		
112.49	297119.65	6268725.24	144°11'45.60"		
116.83	297122.18	6268721.73		118	8.67
121.16	297124.46	6268718.03	148°24'19.18"		
138.47	297133.52	6268703.29	148°24'19.18"		
150.1	297139.68	6268693.28		-65	23.27
161.73	297148.96	6268686.05	127°53'42.84"		
186.78	297168.73	6268670.67	127°53'42.84"		
199.37	297178.67	6268662.93		252.5	25.18
211.96	297187.79	6268654.24	133°36'31.80"		
224.2	297196.66	6268645.8	133°36'31.80"		
235.63	297204.94	6268637.9		-197.5	22.86
247.06	297214.09	6268631.02	126°58'35.46"		
260.8	297225.06	6268622.76	126°58'35.46"		
266.8	297229.86	6268619.14		100	12.01
272.81	297234.2	6268614.98	133°51'28.49"		
280.17	297239.5	6268609.88	133°51'28.49"		

REACH 3 PP1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297065.51	6268708.93	14°58'17.92"		
9.07	297069.19	6268722.7		-9	18.14
18.14	297055.17	6268720.1	259°30'26.49"		
21.43	297051.74	6268719.47		8	6.59
24.73	297048.93	6268721.56	306°42'44.89"		
28.19	297046.16	6268723.63	306°42'44.89"		

REACH 3 PP2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297114.92	6268653.04	33°40'12.50"		
6.13	297118.97	6268659.11		-9	12.26
12.26	297113.87	6268664.32	315°38'03.61"		
18.39	297108.77	6268669.54		-9	12.26
24.52	297102.61	6268665.63	237°35'54.73"		

REACH 3 FP3

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296955.72	6268790.18	133°52'00.00"		
74.31	297009.3	6268738.69	133°52'00.00"		
79.9	297013.56	6268734.59		-14	11.19
85.5	297019.47	6268734.79	88°04'26.06"		
88.46	297022.43	6268734.89	88°04'26.06"		
94.18	297028.49	6268735.09		14	11.45
99.9	297032.78	6268730.81	134°54'51.08"		
105.89	297037.02	6268726.59	134°54'51.08"		
108.75	297039.05	6268724.56		-40	5.73
111.61	297041.35	6268722.85	126°42'44.89"		
128.02	297054.5	6268713.04			
137.77	297062.21	6268707.07	127°45'30.85"		
153.46	297074.72	6268697.38		100	31.39
169.16	297083.63	6268684.3			
169.19	297083.65	6268684.27			
187.45	297093.95	6268669.14		-207	36.51
205.71	297106.75	6268656.06	135°38'08.16"		
206.25	297107.14	6268655.66	135°38'08.16"		
206.59	297107.37	6268655.43		-20	0.66
206.92	297107.61	6268655.2	133°44'19.32"		
222.24	297118.68	6268644.61	133°44'19.32"		

RETAINING WALL 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296964.39	6268808.59	351°38'14.75"		
2.03	296964.1	6268810.61	351°38'14.75"		
5.62	296963.5	6268814.65		-6	7.18
9.21	296959.52	6268815.58	283°04'55.19"		
9.33	296959.41	6268815.6	283°04'55.19"		
11.62	296957.17	6268816.12		-20	4.57
13.9	296954.88	6268816.12	269°59'40.18"		
21.29	296947.49	6268816.12	269°59'40.18"		
28.34	296940.42	6268816.12		-70	14.09
35.38	296933.49	6268814.71	258°27'27.65"		
62.74	296906.69	6268809.23	258°27'27.65"		

RETAINING WALL 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296957.36	6268862.15	135°22'10.04"		
15.46	296968.22	6268851.14	135°22'10.04"		
20.02	296971.43	6268847.89		50	9.12
24.58	296974	6268844.11	145°49'02.22"		
25.29	296974.4	6268843.52	145°49'02.22"		
30.16	296977.16	6268839.45		-30	9.73
35.03	296981.07	6268836.48	127°13'43.38"		
56.81	296998.41	6268823.31	127°13'43.38"		
61.58	297002.42	6268820.26		12	9.54
66.34	297003.06	6268815.26	172°45'37.77"		
67.7	297003.23	6268813.92	172°45'37.77"		

RETAINING WALL 3

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297004.97	6268797.96	172°45'37.77"		
0.68	297005.06	6268797.29	172°45'37.77"		
10.77	297006.67	6268784.63		-13	20.18
20.86	297019.36	6268786	83°48'20.36"		
32.18	297030.61	6268787.22	83°48'20.36"		

RETAINING WALL 4

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297012.54	6268742.51	313°52'00.00"		
59.4	296969.72	6268783.67	313°52'00.00"		
62.67	296967.27	6268786.02		10	6.55
65.95	296966.76	6268789.38	351°24'05.38"		
69.23	296966.27	6268792.62	351°24'05.38"		

RETAINING WALL 5

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296835.82	6268893.99	308°25'18.15"		
2.75	296833.67	6268895.7		-77.75	5.5
5.5	296831.4	6268897.25	304°22'17.72"		
15.11	296823.47	6268902.68	304°22'17.72"		
21.37	296818.29	6268906.22		-102.75	12.54
27.64	296812.72	6268909.11	297°22'53.41"		
39.59	296802.11	6268914.6	297°22'53.41"		
47.65	296793.81	6268918.9		-12.75	16.13
55.72	296787.21	6268912.28	224°54'02.00"		

HEADWALL 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296958.8	6268791.56	81°23'59.96"		
27.39	296985.89	6268795.66		1992.4	54.78
54.78	297013.07	6268799.01	82°58'31.11"		

HEADWALL 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297011.12	6268814.89	262°58'31.11"		
27.61	296983.71	6268811.51		-2008.4	55.22
55.22	296956.41	6268807.38	261°23'59.96"		

REACH 4 PP5

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296860.54	6268932.78	188°02'13.30"		
0.53	296860.46	6268932.26	188°02'13.30"		
13.6	296857.58	6268911.85		-12.93	26.14
26.67	296877.22	6268918.13	72°14'51.57"		
27.13	296877.66	6268918.27	72°14'51.57"		

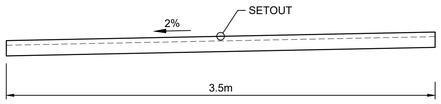
TC01 REACH 3

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297144.16	6268656.45	312°37'18.54"		
10.88	297136.16	6268663.82	312°37'18.54"		
11.17	297135.95	6268664.01		30	0.59
11.46	297135.73	6268664.22	313°44'24.64"		
24.07	297126.63	6268672.93	313°44'24.64"		
29.27	297122.85	6268676.54		45	10.4
34.47	297120.01	6268680.92	326°59'02.84"		
48.26	297112.49	6268692.49	326°59'02.84"		
48.89	297112.15	6268693.02		10	1.27
49.53	297111.87	6268693.59	334°16'12.57"		
59.07	297107.73	6268702.19	334°16'12.57"		
71.74	297102.04	6268714		-40	25.33
84.41	297090.46	6268720.15	297°58'54.32"		
87.26	297087.94	6268721.49	297°58'54.32"		
93.8	297082.12	6268724.58		45	13.07
100.34	297077.44	6268729.2	314°37'31.74"		
110.45	297070.24	6268736.31	314°37'31.74"		
120.44	297063.01	6268743.44		-45	19.96
130.42	297053.43	6268746.78	289°12'19.24"		
151.59	297033.44	6268753.74	289°12'19.24"		
156.41	297028.87	6268755.34		45	9.64
161.23	297024.74	6268757.86	301°28'54.73"		
175.18	297012.84	6268765.15	301°28'54.73"		
178.74	297009.8	6268767.01		-50	7.12
182.3	297006.53	6268768.42	293°19'24.01"		
185.03	297004.03	6268769.5	293°19'24.01"		
200.44	296988.48	6268776.2		30	30.82
215.85	296986.18	6268792.97	352°11'07.78"		
226.36	296984.75	6268803.39	352°11'07.78"		

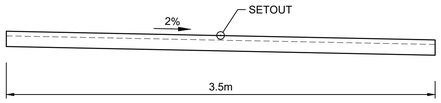
TC01 REACH 4

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296984.75	6268803.39	352°11'07.78"		
9.03	296983.52	6268812.33	352°11'07.78"		
19.48	296981.92	6268824.03		-18	20.9
29.93	296970.55	6268827.21	285°38'39.38"		
50.84	296950.41	6268832.85	285°38'39.38"		
54.48	296946.9	6268833.84		100	7.29
58.13	296943.47	6268835.07	289°49'22.59"		
77.23	296925.5	6268841.55	289°49'22.59"		
77.36	296925.38	6268841.59		-40	0.26
77.49	296925.26	6268841.64	289°26'45.96"		
93.62	296910.05	6268847.01	289°26'45.96"		
95.44	296908.33	6268847.61		50	3.65
97.26	296906.66	6268848.34	293°37'23.35"		
106.37	296898.32	6268851.99	293°37'23.35"		
116.42	296888.95	6268856.09		45	20.1
126.47	296882.28	6268863.83	319°12'54.42"		
136	296876.05	6268871.05	319°12'54.42"		
147.09	296868.77	6268879.48		100	22.18
158.18	296863.53	6268889.3	331°55'24.82"		
169.47	296858.22	6268899.26	331°55'24.82"		
179	296853.68	6268907.77		-50	19.05
188.52	296846.3	6268913.98	310°05'17.56"		
190.8	296844.57	6268915.45	310°05'17.56"		
199.6	296837.76	6268921.17		-50	17.61
208.4	296829.4	6268924.2	289°54'47.83"		
216.49	296821.8	6268926.96	289°54'47.83"		
224.13	296814.57	6268929.57		60	15.28
231.77	296808.24	6268933.93	304°30'23.18"		
242.65	296799.27	6268940.09	304°30'23.18"		
254.44	296789.37	6268946.89		50	23.57
266.22	296783.65	6268957.45	331°30'56.27"		
283.31	296775.5	6268972.46	331°30'56.27"		

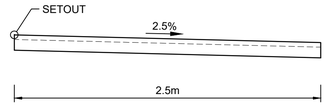
ELEMENT	DESCRIPTION	PAVEMENT
REACH 4 ACCESS 1	COMBINED SHARED PATH / MAINTENANCE ACCESS 3.5m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
REACH 4 FP4	SHARED PATH 2.5m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
REACH 3 ACCESS 1	MAINTENANCE ACCESS 3.5m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
REACH 3 FP1	SHARED PATH 2.5m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
REACH 3 FP3 CH: 0 TO 90	COMBINED SHARED PATH / FIRE ACCESS 4.0m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
REACH 3 FP3 CH: 90 TO END	SHARED PATH 2.5m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER



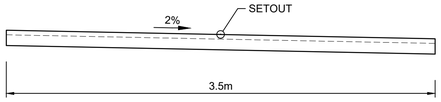
REACH 4 ACCESS 1
CH: 91.9 TO 151.3
(SHARED PATH/MAINTENANCE ACCESS)
SCALE 1:25



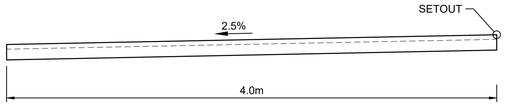
REACH 4 ACCESS 1
CH: 0 TO 77.5 AND 164.3 TO END
(SHARED PATH/MAINTENANCE ACCESS)
SCALE 1:25



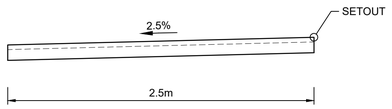
REACH 4 FP4 AND REACH 3 FP1
(SHARED PATH)
SCALE 1:25



REACH 3 ACCESS 1
(MAINTENANCE ACCESS)
SCALE 1:25



REACH 3 FP3
CH: 0 TO 90
(SHARED PATH / FIRE ACCESS PATH)
SCALE 1:25



REACH 3 FP3
CH: 90 TO END
(SHARED PATH)
SCALE 1:25

NOTE:

ALL PATHS ARE TO BE CONSTRUCTED TO BLACKTOWN CITY COUNCILS 'PATH PAVING POLICY 2009'

1:25(AT A1) 500 0 500 1000 1500 2000 2500 MILLIMETRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SETOUT TABLES AND FOOTPATH DETAILS

PLAN No: 11035005/CC255 B
FILE No: 11035005CC255
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:56:36 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC255.dwg

LEGEND

PAVEMENT DESIGN (REFER TO REPORT BY GEOTECH TESTING PTY LTD (Ref:8537/5-AA) DATED 03/07/2018

PAVEMENT (COLLECTOR ROAD) ESA $1x10^6$

AC10 (mm)	= 2x25
2 COATS FLUSH SEAL	
BASE COURSE (mm) DGB20	= 150
SUB-BASE COURSE (mm) SANDSTONE	= 185
TOTAL (mm)	= 385

CONCRETE PAVEMENT
REFER TO INHOUSE CONSULTING ENGINEERS PLANS FOR CONCRETE PAVEMENT AND JOINTING DETAILS

SCOUR PROTECTION
REFER TO SHEETS CC265 AND CC276 FOR DETAILS

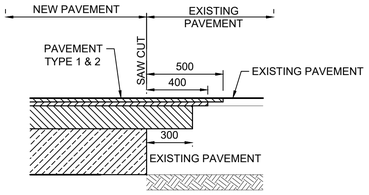
PAVEMENT (SHARED FOOTPATH)
CONCRETE (mm) = 125
SL82 MESH WITH 35mm TOP COVER

PAVEMENT (FOOTPATH)
CONCRETE (mm) = 125

TURF AREA
TURF AREA TO LANDSCAPE ARCHITECT'S SPECIFICATIONS

CHANNEL PLANTING
PLANTING TO LANDSCAPE ARCHITECT'S SPECIFICATIONS

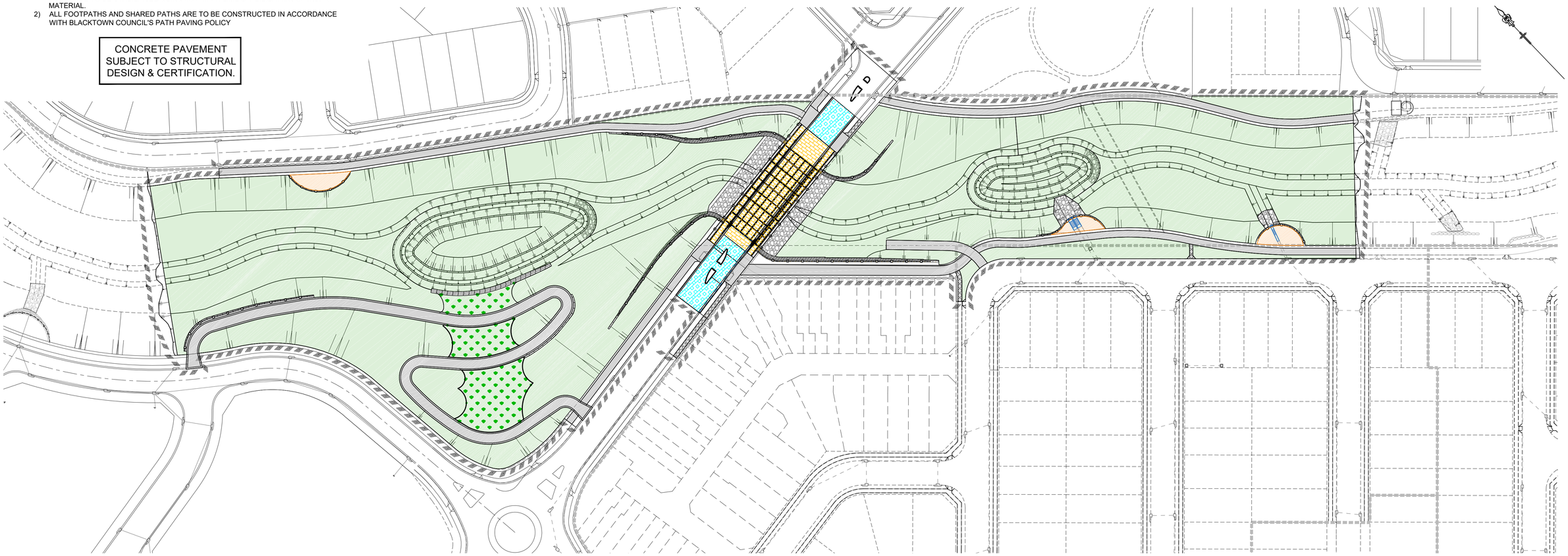
POCKET PARK
LANDSCAPE ARCHITECT'S SPECIFICATIONS



INTERFACE BETWEEN NEW PAVEMENT AND EXISTING FLEXIBLE PAVEMENTS
SCALE 1:20

NOTES:
1) PAVEMENT DESIGN SUBJECT TO GEOTECHNICAL TESTING SUBGRADE LAYER TO BE A MINIMUM OF CBR 7. SUBGRADE TO BE STABILAISED USING 300mm 4% LIME STABILISATION OF INSITU MATERIAL.
2) ALL FOOTPATHS AND SHARED PATHS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH BLACKTOWN COUNCIL'S PATH PAVING POLICY

CONCRETE PAVEMENT SUBJECT TO STRUCTURAL DESIGN & CERTIFICATION.



1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES

1:750 (AT A1) 15 7.5 0 7.5 15 22.5 30 37.5 45 52.5 60 67.5 75 METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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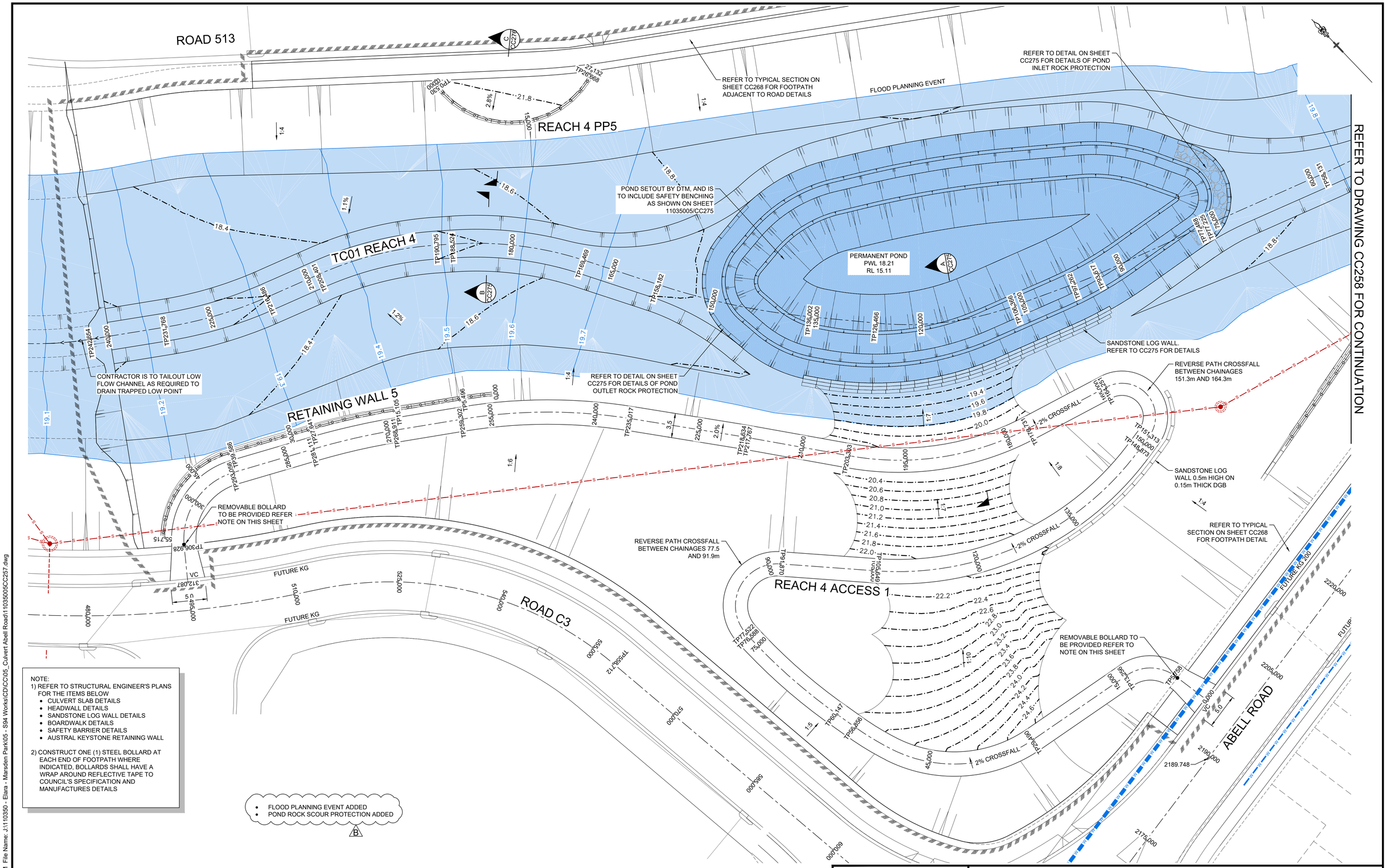
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
PAVEMENT AND GROUND COVER PLAN

PLAN No: 11035005/CC256 B
FILE No: 11035005CC256
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:56:57 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC256.dwg



NOTE:
1) REFER TO STRUCTURAL ENGINEER'S PLANS FOR THE ITEMS BELOW
- CULVERT SLAB DETAILS
- HEADWALL DETAILS
- SANDSTONE LOG WALL DETAILS
- BOARDWALK DETAILS
- SAFETY BARRIER DETAILS
- AUSTRAL KEYSTONE RETAINING WALL

2) CONSTRUCT ONE (1) STEEL BOLLARD AT EACH END OF FOOTPATH WHERE INDICATED, BOLLARDS SHALL HAVE A WRAP AROUND REFLECTIVE TAPE TO COUNCIL'S SPECIFICATION AND MANUFACTURES DETAILS

- FLOOD PLANNING EVENT ADDED
- POND ROCK SCOUR PROTECTION ADDED

B

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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ORIGIN:

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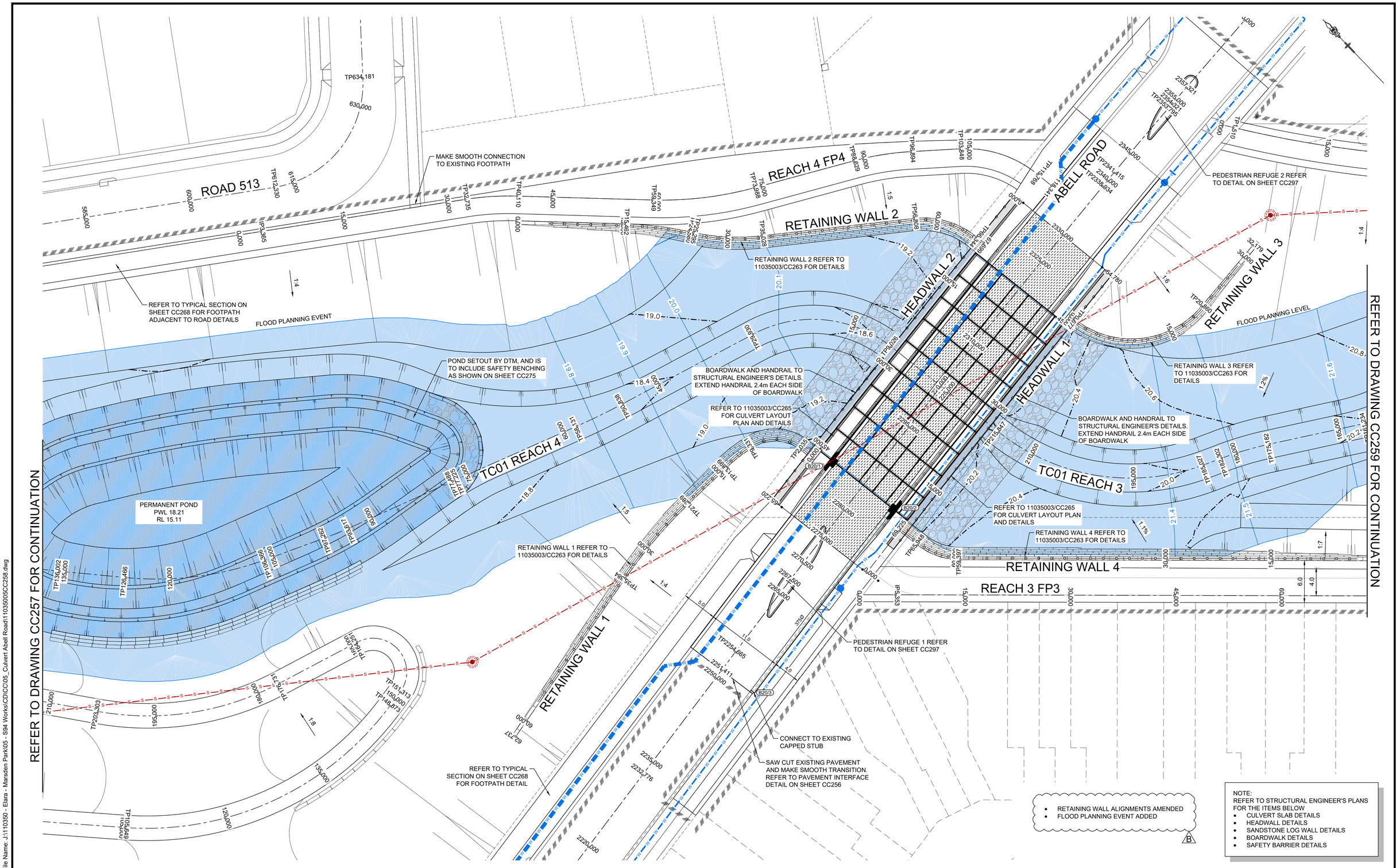
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
ENGINEERING PLAN
SHEET 1

PLAN No: 11035005/CC257 B
FILE No: 11035005CC257
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:57:32 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC257.dwg



- RETAINING WALL ALIGNMENTS AMENDED
- FLOOD PLANNING EVENT ADDED

B

NOTE:
REFER TO STRUCTURAL ENGINEER'S PLANS FOR THE ITEMS BELOW
- CULVERT SLAB DETAILS
- HEADWALL DETAILS
- SANDSTONE LOG WALL DETAILS
- BOARDWALK DETAILS
- SAFETY BARRIER DETAILS

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

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CLIENT: Stockland

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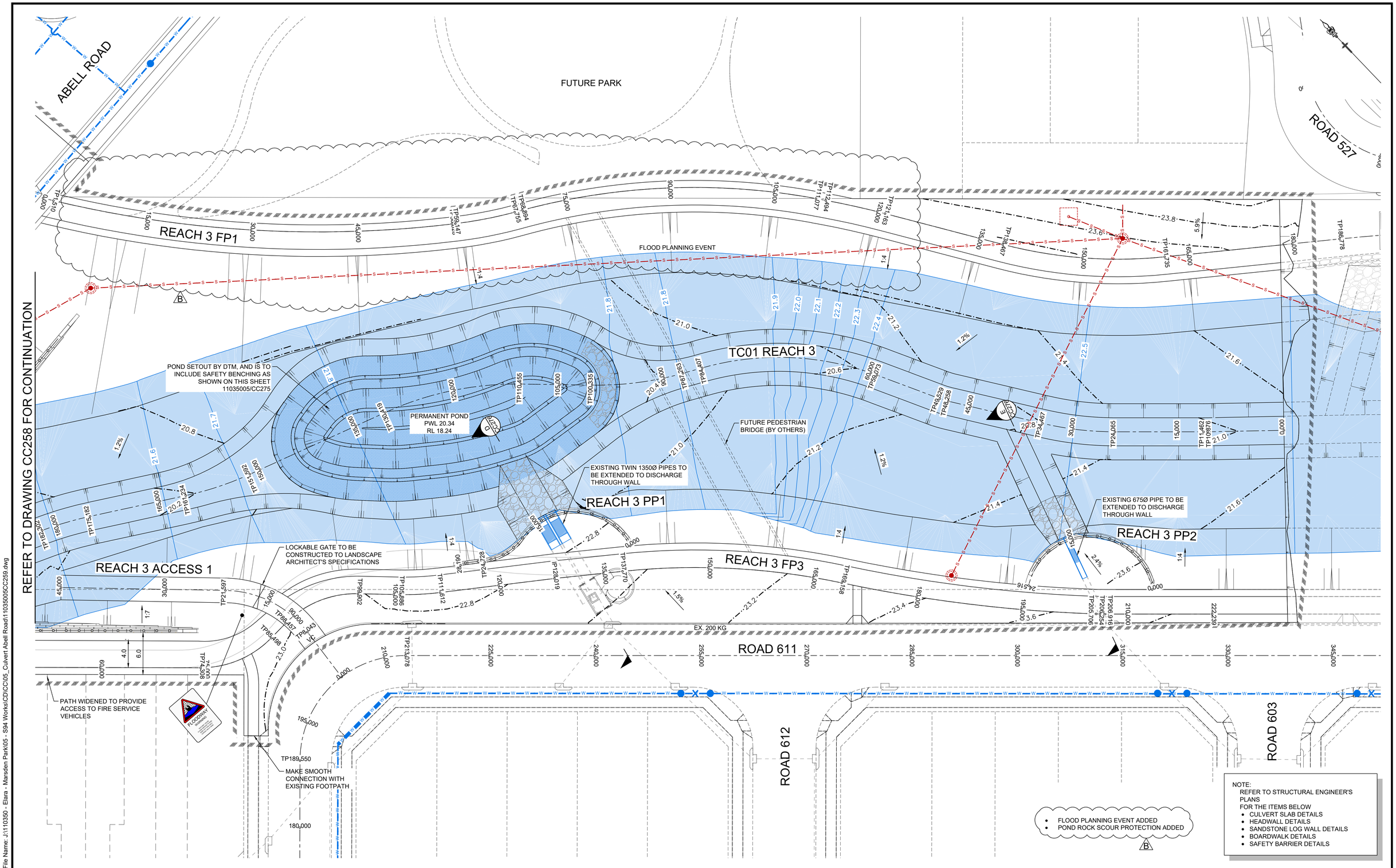
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
ENGINEERING PLAN
SHEET 2

PLAN No: 11035005/CC258 B
FILE No: 11035005CC258
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:58:12 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC258.dwg



- FLOOD PLANNING EVENT ADDED
- POND ROCK SCOUR PROTECTION ADDED

B

NOTE:
REFER TO STRUCTURAL ENGINEER'S PLANS
FOR THE ITEMS BELOW
- CULVERT SLAB DETAILS
- HEADWALL DETAILS
- SANDSTONE LOG WALL DETAILS
- BOARDWALK DETAILS
- SAFETY BARRIER DETAILS

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

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DATUM:
ORIGIN:

CLIENT: Stockland

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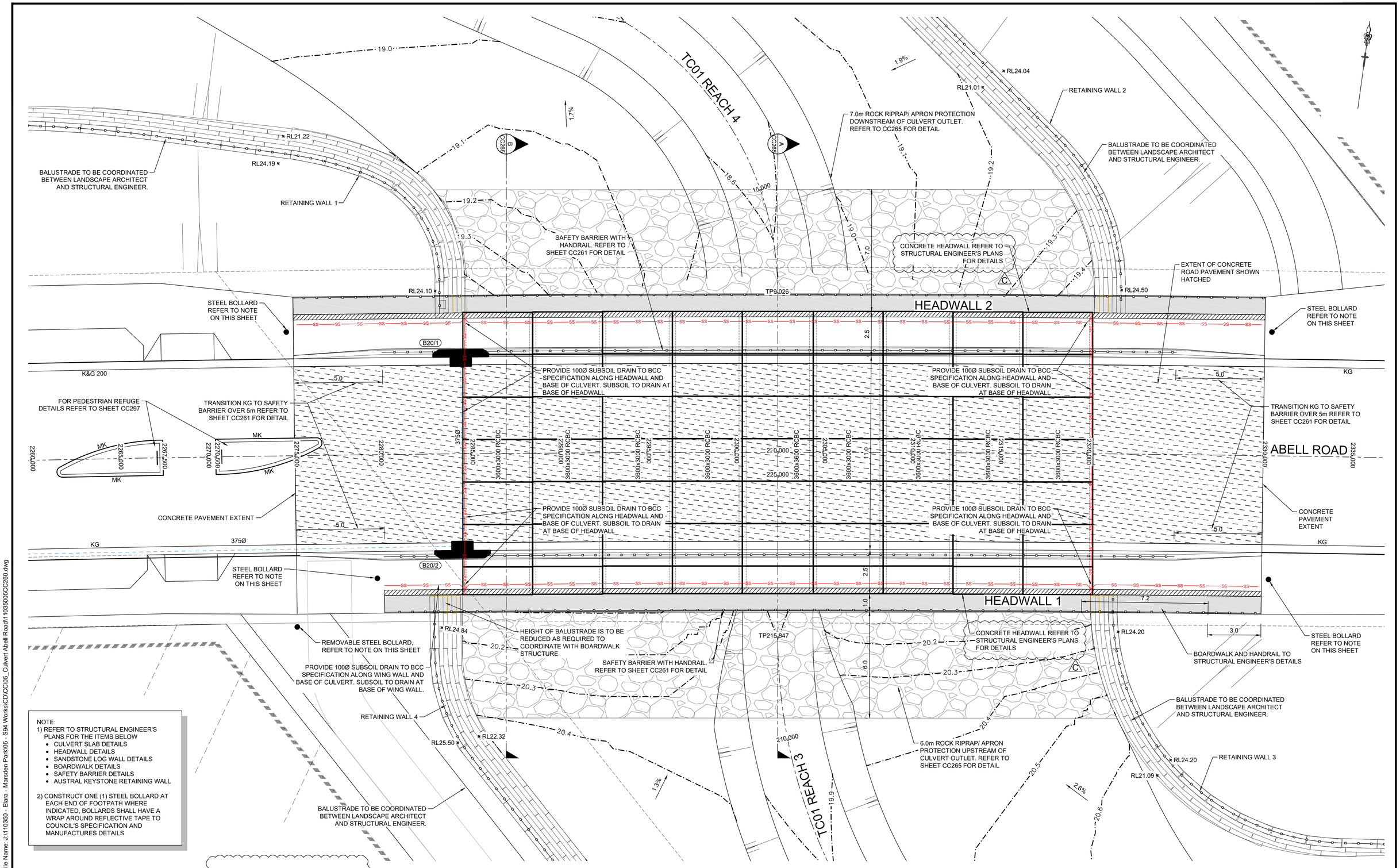
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
ENGINEERING PLAN
SHEET 3

PLAN No: 11035005/CC259 B
FILE No: 11035005CC259
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:58:49 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC05_Culvert Abell Road\11035005CC259.dwg



C	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
B	STREET LIGHTS ADDED	VG	UF	AM	MS	27/08/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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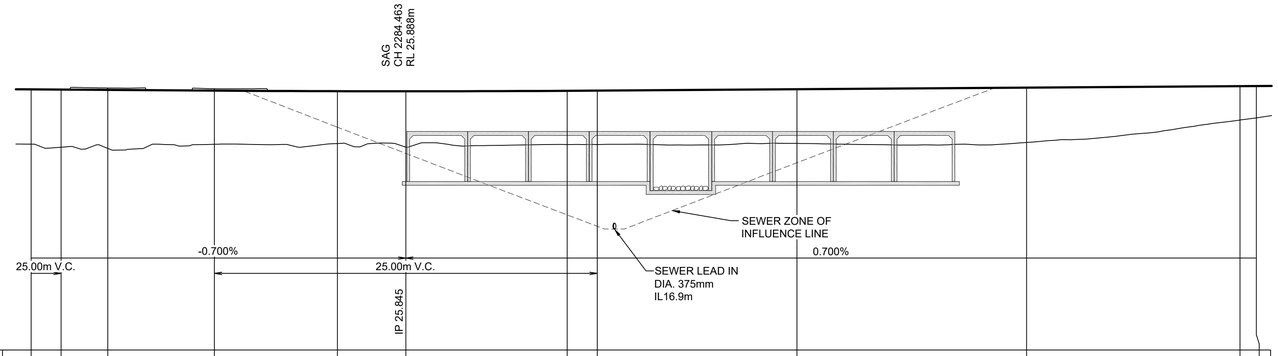
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
CULVERT DETAIL PLAN

PLAN No: 11035005/CC260 C
FILE No: 11035005CC260
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:59:29 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC260.dwg

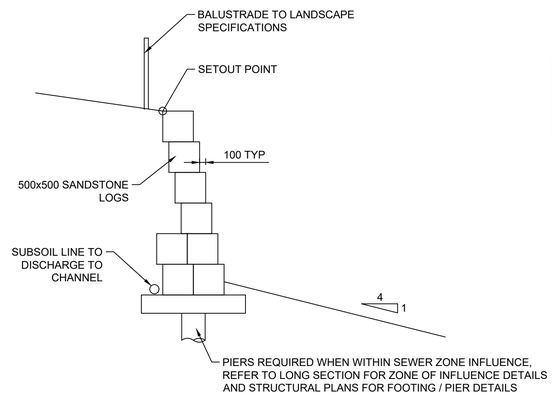


DATUM 9.0

WAE													
DESIGN LINE GRADING	26.015	26.002	25.981	25.932	25.894	25.888	25.920	25.932	26.023	26.128	26.226	26.233	
EXISTING SURFACE	22.440	22.237	22.161	22.430	22.478	22.242	22.415	22.413	22.486	22.548	24.012	24.152	
CHAINAGE	2260.000	2261.956	2265.000	2271.963	2280.000	2284.463	2295.000	2296.963	2310.000	2325.000	2338.934	2340.000	

LONGITUDINAL SECTION ABELL ROAD

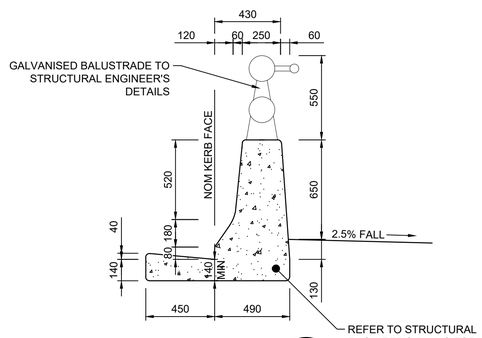
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



TYPICAL SECTION THROUGH SANDSTONE LOG RETAINING WALL

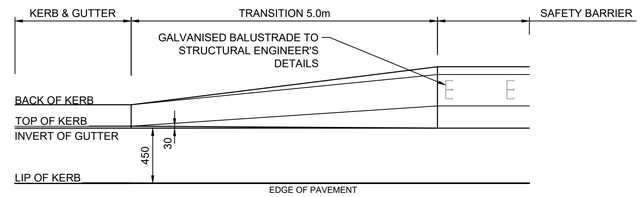
SCALE 1:50

CONCRETE BARRIER & STACKED ROCK RETAINING WALL ARE SUBJECT TO STRUCTURAL DESIGN AND APPROVAL



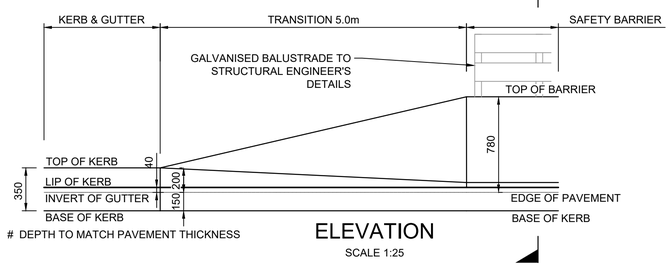
SECTION A

SCALE H 1:20
V 1:20



PLAN

SCALE 1:25



ELEVATION

SCALE 1:25

KERB & GUTTER TO SAFETY BARRIER

1:20 (AT A1) — 400 200 0 400 800 1200 1600 2000 — MILLIMETRES

1:25(AT A1) — 500 0 500 1000 1500 2000 2500 — MILLIMETRES

1:50 (AT A1)
1:100 (AT A3) — 1 0 1 2 3 4 5 — METRES

1:200 (AT A1)
1:400 (AT A3) — 4 2 0 4 8 12 16 20 — METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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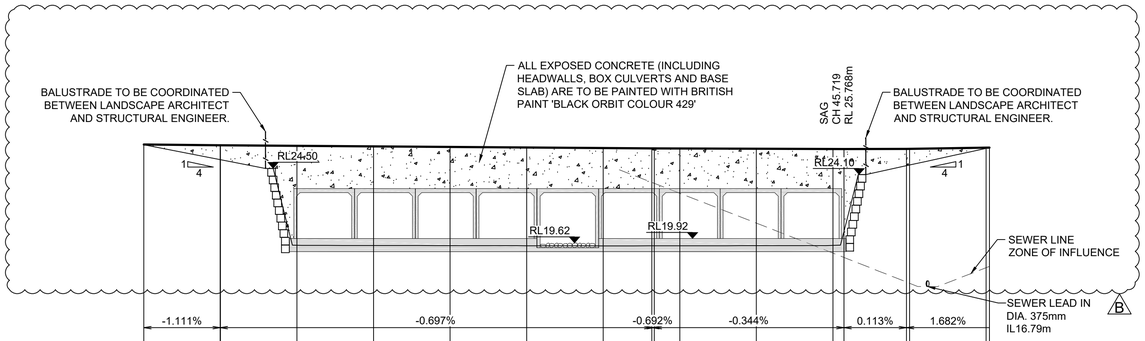
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
ABELL ROAD LONGITUDINAL SECTIONS
ROCK WALL & SAFETY BARRIER DETAIL

PLAN No: 11035005/CC261 B
FILE No: 11035005CC261
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 8:59:45 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC261.dwg

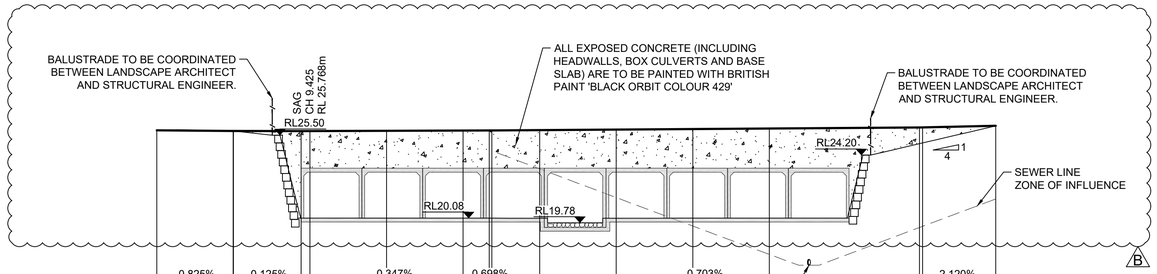


DATUM 9.0

WAE																	
TOP OF WALL	26.063	26.008	26.008	25.973	25.938	25.903	25.868	25.834	25.811	25.810	25.805	25.787	25.770	25.768	25.772	25.776	25.860	25.863
CHANNEL SURFACE	26.043	25.074	25.072	19.484	19.468	19.460	19.453	19.444	19.447	19.447	19.449	19.456	19.477	20.388	24.678	24.722	25.811	25.859
CHAINAGE	0.000	4.990	5.000	10.000	15.000	20.000	25.000	30.000	33.169	33.333	35.000	40.000	45.000	45.719	49.800	50.000	55.000	55.220

LONGITUDINAL SECTION HEADWALL 2

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



DATUM 10.0

WAE																	
TOP OF WALL	25.814	25.773	25.773	25.768	25.770	25.787	25.804	25.810	25.811	25.833	25.869	25.904	25.939	25.974	26.008	26.012	26.113
CHANNEL SURFACE	25.809	25.772	25.772	20.088	20.088	20.085	20.083	20.082	20.082	20.081	20.080	20.082	20.085	20.087	24.945	24.992	26.108
CHAINAGE	0.000	4.990	5.000	9.425	10.000	15.000	20.000	21.712	21.875	25.000	30.000	35.000	40.000	45.000	49.800	50.000	54.780

LONGITUDINAL SECTION HEADWALL 1

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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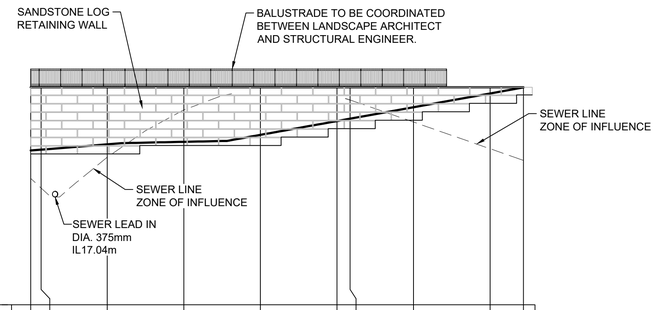
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
HEADWALL SECTIONS

PLAN No: 11035005/CC262 B
FILE No: 11035005CC262
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:00:00 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC262.dwg

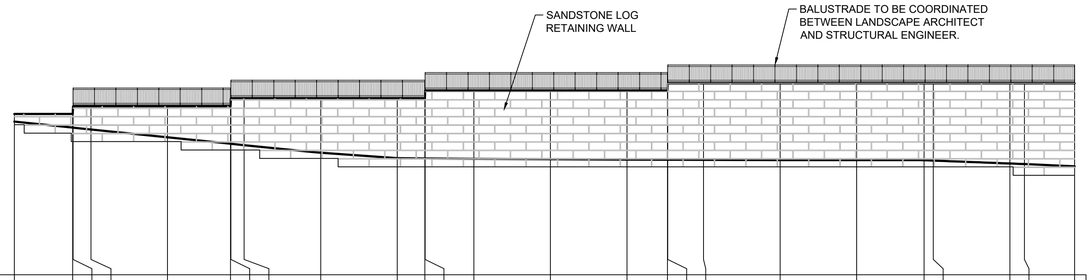


DATUM 10.0

WAE											
TOP OF WALL	24.200	24.200	24.200	24.200	24.200	24.200	24.200	24.200	24.200	24.200	
BOTTOM OF WALL	20.080	20.129	20.477	20.641	21.096	21.996	22.151	22.897	23.798		
CHAINAGE	0.000	0.677	5.000	10.000	15.000	20.000	20.860	25.000	30.000	32.179	

LONGITUDINAL SECTION RETAINING WALL 3

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

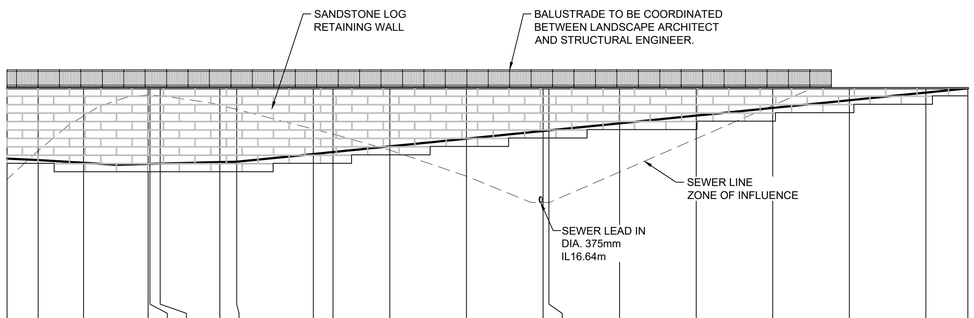


DATUM 13.0

WAE																											
TOP OF WALL	23.500	23.500	24.000	24.000	24.000	24.000	24.500	24.500	24.500	24.500	24.500	24.500	25.000	25.000	25.000	25.000	25.000	25.500	25.500	25.500	25.500	25.500	25.500	25.500	25.500	25.500	25.500
BOTTOM OF WALL	23.000	22.616	22.603	22.484	21.980	21.565	21.552	21.464	20.974	20.612	20.599	20.597	20.575	20.545	20.521	20.511	20.510	20.503	20.492	20.489	20.481	20.458	20.268	20.232	
CHAINAGE	0.000	3.808	3.828	5.000	10.000	14.114	14.134	15.000	20.000	25.000	26.799	26.819	30.000	35.000	40.000	42.643	42.663	45.000	50.000	55.000	59.397	60.000	65.000	65.948	69.225		

LONGITUDINAL SECTION RETAINING WALL 4

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

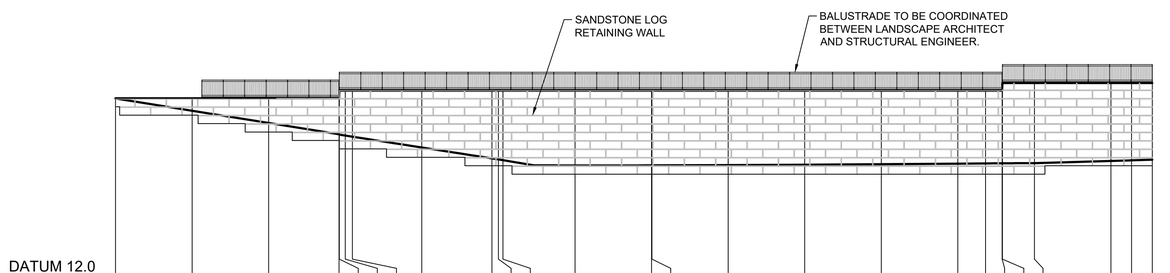


DATUM 9.0

WAE																										
TOP OF WALL	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100	24.100
BOTTOM OF WALL	19.500	19.406	19.231	19.159	19.162	19.178	19.275	19.300	19.802	19.931	20.303	20.805	21.307	21.345	21.809	22.310	22.812	23.314	23.815	
CHAINAGE	0.000	2.035	5.000	9.214	9.331	10.000	13.899	15.000	20.000	21.289	25.000	30.000	35.000	35.384	40.000	45.000	50.000	55.000	60.000	62.737

LONGITUDINAL SECTION RETAINING WALL 1

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



DATUM 12.0

WAE																											
TOP OF WALL	23.500	23.500	23.500	23.500	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.500	24.500	24.500	24.500	24.500
BOTTOM OF WALL	23.490	22.690	21.890	21.155	21.133	21.072	20.998	20.291	19.581	19.513	19.466	19.119	19.123	19.123	19.141	19.167	19.200	19.238	19.252	19.280	19.259	19.272	19.416	19.454	
CHAINAGE	0.000	5.000	10.000	14.595	14.615	15.000	15.462	20.000	24.580	25.000	25.295	30.000	35.000	35.028	40.000	45.000	50.000	55.000	56.808	57.891	57.911	60.000	65.000	66.344	67.699		

LONGITUDINAL SECTION RETAINING WALL 2

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

RETAINING WALL TYPE CHANGED
B

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT:
Stockland

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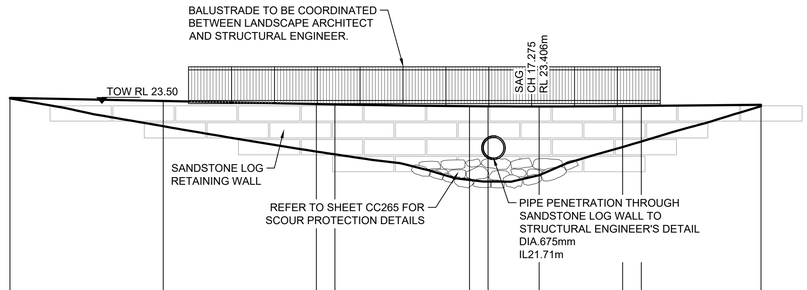
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
RETAINING WALL LONGITUDINAL SECTIONS
SHEET 1

PLAN No: 11035005/CC263 B
FILE No: 11035005CC263
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:00:15 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC263.dwg

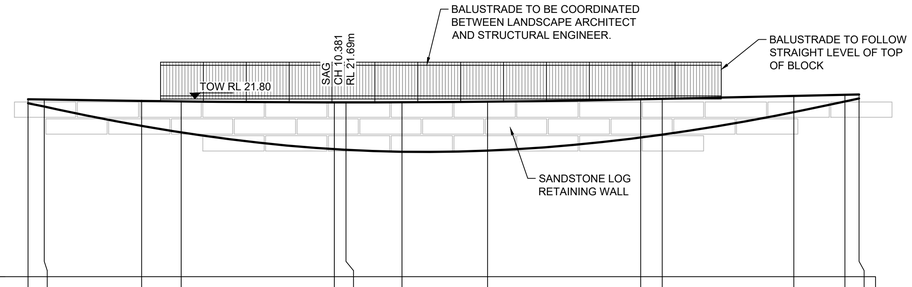


DATUM 17.0

WAE											
PARK FINISHED SURFACE LEVEL	23.685	23.585	23.485	23.473	23.414	23.410	23.406	23.417	23.423	23.462	
BOTTOM OF WALL	23.668	22.760	21.933	21.842	21.007	20.954	21.162	22.081	22.262	23.413	
CHAINAGE	0.000	5.000	10.000	10.608	15.000	15.608	17.275	20.000	20.608	24.516	

LONGITUDINAL SECTION REACH 3 PP2

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

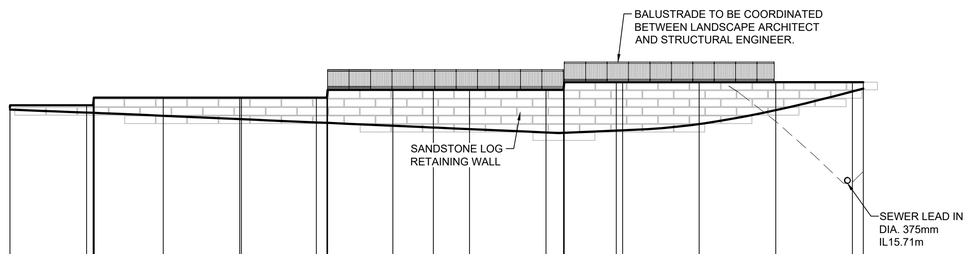


DATUM 16.0

WAE													
PARK FINISHED SURFACE LEVEL	21.790	21.783	21.737	21.721	21.690	21.690	21.693	21.713	21.789	21.804	21.899	21.936	21.946
BOTTOM OF WALL	21.662	21.553	20.923	20.710	20.165	20.141	20.078	20.114	20.543	20.636	21.371	21.721	21.818
CHAINAGE	0.000	0.530	3.706	5.000	10.000	10.381	12.206	15.000	20.000	20.706	25.000	26.688	27.132

LONGITUDINAL SECTION REACH 4 PP5

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

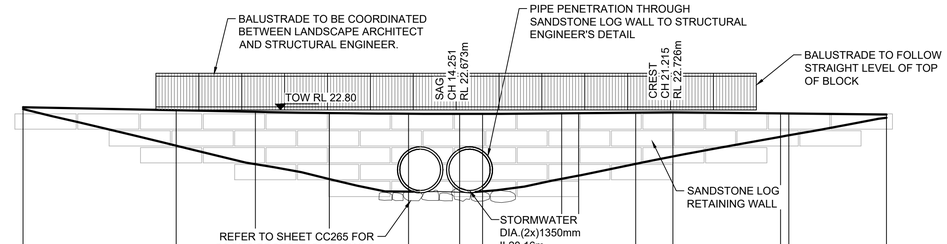


DATUM 8.0

WAE																						
TOP OF WALL	20.742	20.800	20.800	21.300	21.300	21.300	21.300	21.300	21.300	21.800	21.800	21.800	21.800	21.800	21.800	22.300	22.300	22.300	22.300	22.300	22.300	22.300
BOTTOM OF WALL	20.517	20.317	20.305	20.304	20.303	20.111	19.895	19.891	19.673	19.649	19.647	19.460	19.344	19.241	19.023	18.998	18.999	19.144	19.162	19.576	20.481	21.698	21.886
CHAINAGE	0.000	5.000	5.428	5.478	5.496	10.000	15.000	15.105	20.000	20.689	20.739	25.000	27.641	30.000	35.000	36.139	36.189	39.586	40.000	45.000	50.000	55.000	55.715

LONGITUDINAL SECTION RETAINING WALL 5

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



DATUM 16.0

WAE																						
PARK FINISHED SURFACE LEVEL	22.891	22.791	22.739	22.700	22.677	22.673	22.674	22.689	22.695	22.714	22.726	22.689	22.687	22.654								
BOTTOM OF WALL	22.831	21.634	21.030	20.544	20.135	20.116	20.143	20.552	20.657	21.039	21.283	21.925	21.976	22.547								
CHAINAGE	0.000	5.000	7.584	10.000	12.584	14.251	15.000	17.584	18.137	20.000	21.215	24.728	25.000	28.190								

LONGITUDINAL SECTION REACH 3 PP1

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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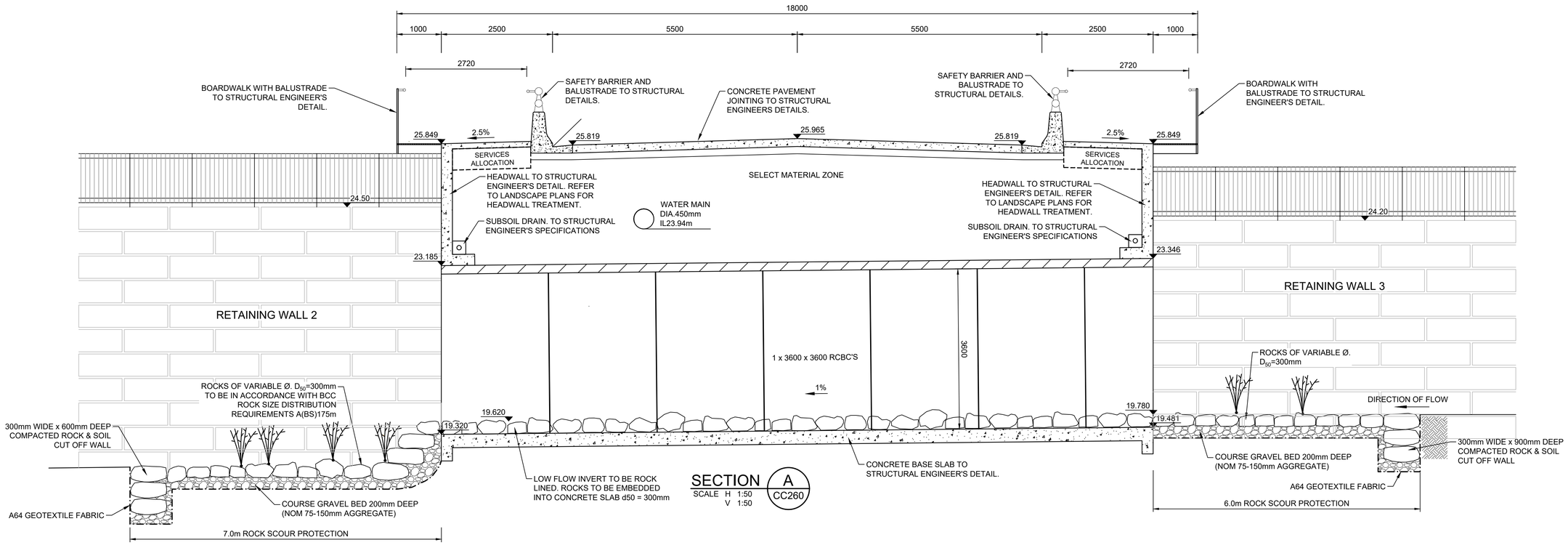
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
RETAINING WALL LONGITUDINAL SECTIONS
SHEET 2

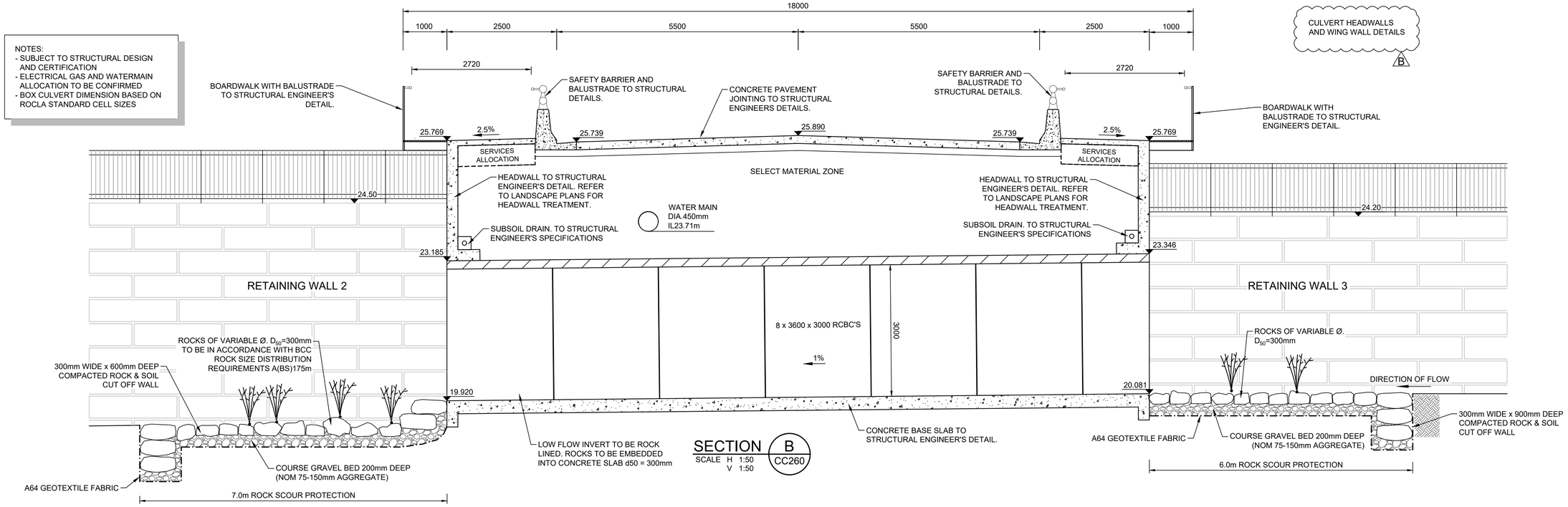
PLAN No: 11035005/CC264 B
FILE No: 11035005CC264
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:00:31 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC264.dwg



SECTION A
SCALE H 1:50
V 1:50
CC260

NOTES:
- SUBJECT TO STRUCTURAL DESIGN AND CERTIFICATION
- ELECTRICAL GAS AND WATERMAIN ALLOCATION TO BE CONFIRMED
- BOX CULVERT DIMENSION BASED ON ROCLA STANDARD CELL SIZES



SECTION B
SCALE H 1:50
V 1:50
CC260

1:50 (AT A1)
1:100 (AT A3)
1 0 1 2 3 4 5
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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AZIMUTH:
DATUM:
ORIGIN:

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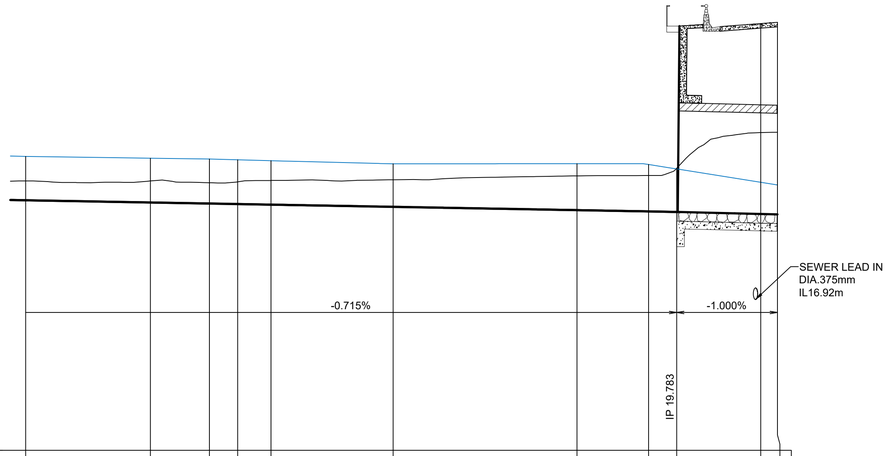
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
CULVERT SECTIONS

PLAN No: 11035005/CC265 B
FILE No: 11035005CC265
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:00:46 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC265.dwg

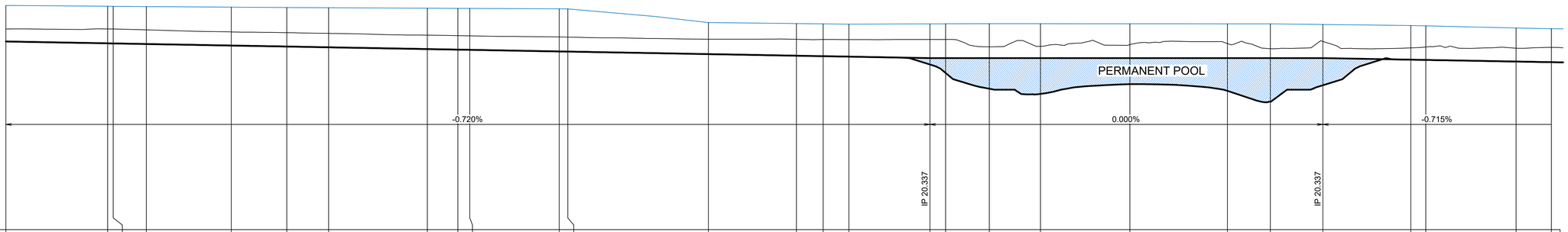


DATUM 12.0

WAE													
DESIGN LINE GRADING	20.163	20.090	20.056	20.039	20.020	19.948	19.841	19.799	19.783	19.714	19.700		
FLOOD PLANNING EVENT	21.595	21.536	21.509	21.484	21.454	21.354	21.355	21.329	21.186	20.750	20.664		
EXISTING SURFACE	20.794	20.793	20.735	20.763	20.809	20.831	20.959	20.970	21.208	22.373	22.382		
CHAINAGE	165.000	175.182	180.000	182.302	185.027	195.000	210.000	215.847	218.136	225.000	226.362		

LONGITUDINAL SECTION TC01 REACH 3

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 13.0

WAE																												
DESIGN LINE GRADING	21.047	20.969	20.965	20.939	20.874	20.831	20.799	20.723	20.700	20.691	20.622	20.615	20.508	20.440	20.419	20.400	20.337	20.337	20.337	20.337	20.337	20.337	20.337	20.337	20.270	20.259	20.190	20.163
FLOOD PLANNING EVENT	22.592	22.555	22.553	22.541	22.516	22.500	22.490	22.489	22.464	22.462	22.445	22.444	21.857	21.815	21.802	21.791	21.803	21.805	21.811	21.810	21.807	21.804	21.803	21.776	21.732	21.716	21.626	21.595
EXISTING SURFACE	21.583	21.585	21.581	21.545	21.458	21.426	21.395	21.320	21.299	21.289	21.244	21.235	21.148	21.141	21.132	21.130	21.134	21.136	20.823	20.841	20.914	20.961	20.738	21.048	20.774	20.813	20.763	20.794
CHAINAGE	0.000	10.876	11.462	15.000	24.065	30.000	34.467	45.000	48.258	49.529	59.073	60.000	75.000	84.407	87.263	90.000	98.654	100.335	105.000	110.455	120.000	130.419	135.000	140.606	150.000	151.592	161.234	165.000

LONGITUDINAL SECTION TC01 REACH 3

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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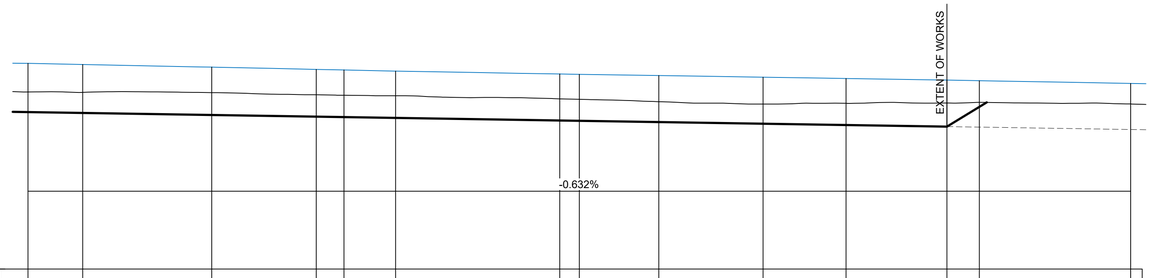
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
REACH 3 LONGITUDINAL SECTION

PLAN No: 11035005/CC266 B
FILE No: 11035005CC266
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:01:01 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC266.dwg

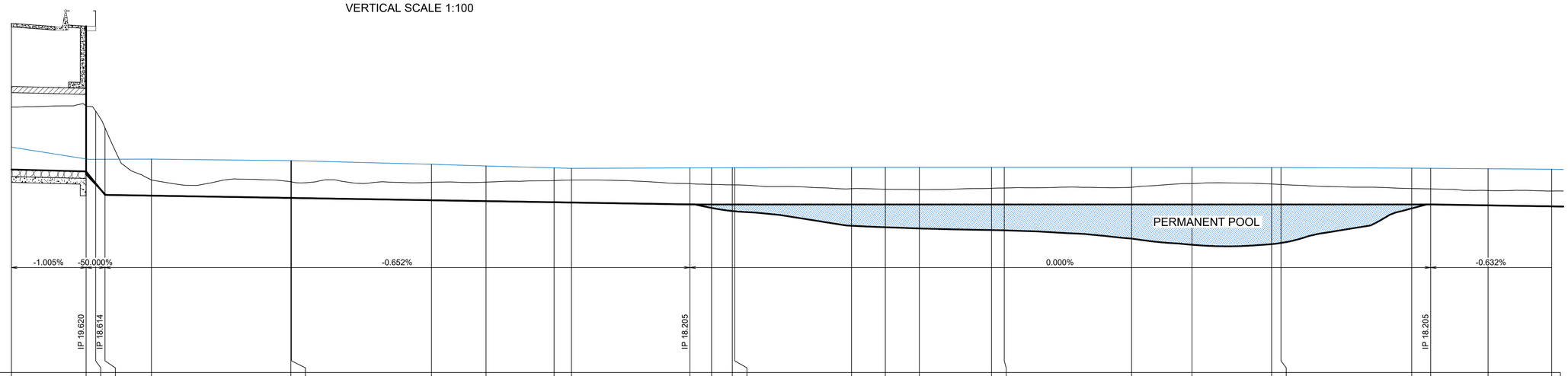


DATUM 13.0

WAE															
DESIGN LINE GRADING	18.123	18.095	18.028	17.974	17.960	17.934	17.849	17.839	17.798	17.744	17.701	17.649	17.632	17.554	
FLOOD PLANNING EVENT	19.714	19.677	19.590	19.516	19.496	19.460	19.364	19.353	19.314	19.261	19.218	19.166	19.147	19.058	
EXISTING SURFACE	18.780	18.765	18.756	18.688	18.673	18.656	18.555	18.541	18.462	18.386	18.408	18.417	18.439	18.387	
CHAINAGE	165.000	169.469	180.000	188.524	190.795	195.000	208.401	210.000	216.486	225.000	231.768	240.000	242.654	255.000	

LONGITUDINAL SECTION TC01 REACH 4

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 11.0

WAE																																
DESIGN LINE GRADING	19.700	19.620	19.111	18.614	18.581	18.484	18.483	18.386	18.348	18.300	18.288	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.205	18.166	18.123
FLOOD PLANNING EVENT	20.664	20.157	20.141	20.142	20.149	20.083	20.082	19.926	19.856	19.773	19.751	19.772	19.776	19.778	19.779	19.793	19.793	19.793	19.793	19.793	19.793	19.793	19.791	19.788	19.786	19.762	19.755	19.736	19.714
EXISTING SURFACE	22.382	22.421	22.206	21.493	19.252	19.178	19.172	19.152	19.161	19.230	19.250	19.095	19.065	19.045	19.044	18.881	18.857	18.839	18.898	18.910	18.942	19.101	19.080	19.061	18.889	18.872	18.802	18.780
CHAINAGE	0.000	8.008	9.026	10.021	15.000	29.930	30.000	45.000	50.838	58.131	60.000	72.688	75.000	77.225	77.488	90.000	93.617	97.262	105.000	106.366	120.000	126.466	135.000	136.002	150.000	152.032	158.182	165.000

LONGITUDINAL SECTION TC01 REACH 4

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1) 1:200 (AT A3) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:250 (AT A1) 1:500 (AT A3) 5 0 5 10 15 20 25 METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

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DATUM:
ORIGIN:

CLIENT: Stockland

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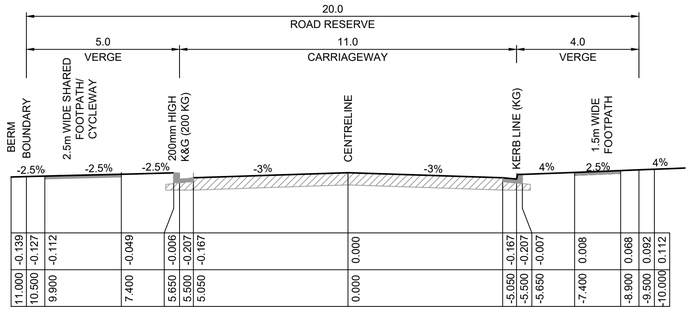
ISSUED FOR CONSTRUCTION APPROVAL

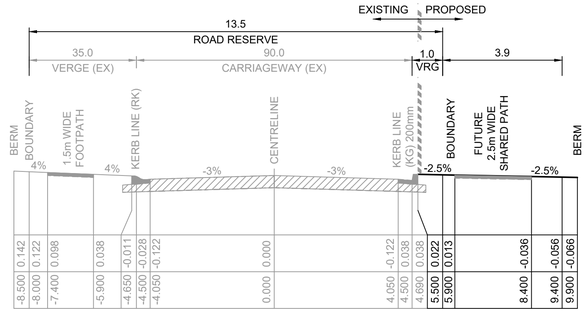
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
REACH 4 LONGITUDINAL SECTION

PLAN No: 11035005/CC267 B
FILE No: 11035005CC267
SHEET SIZE: A1 ORIGINAL

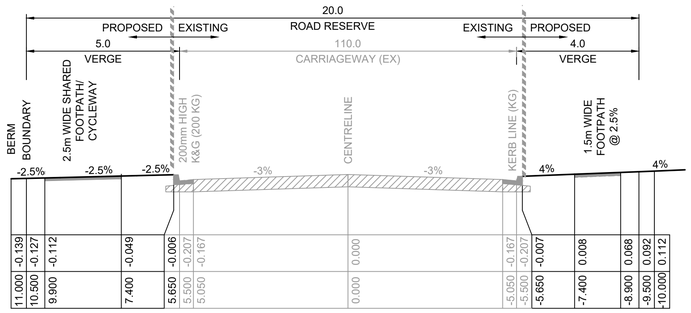
Plotted: 16 October, 2018 9:01:16 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC267.dwg



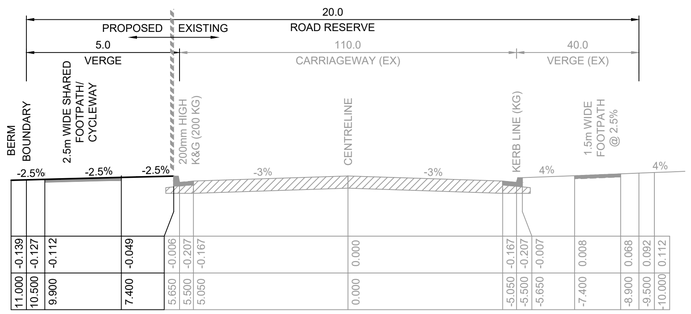
TYPICAL CROSS SECTION COLLECTOR ROAD
ABELL ROAD CH 2251.411-2275 AND 2330-2345
1:100 NATURAL



TYPICAL CROSS SECTION - PERIMETER ROAD
ROAD 513
1:100 NATURAL



TYPICAL CROSS SECTION COLLECTOR ROAD
ABELL ROAD CH 2232.776-2251.411
1:100 NATURAL



TYPICAL CROSS SECTION COLLECTOR ROAD
ABELL ROAD CH 2189.748-2232.776
1:100 NATURAL

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT:
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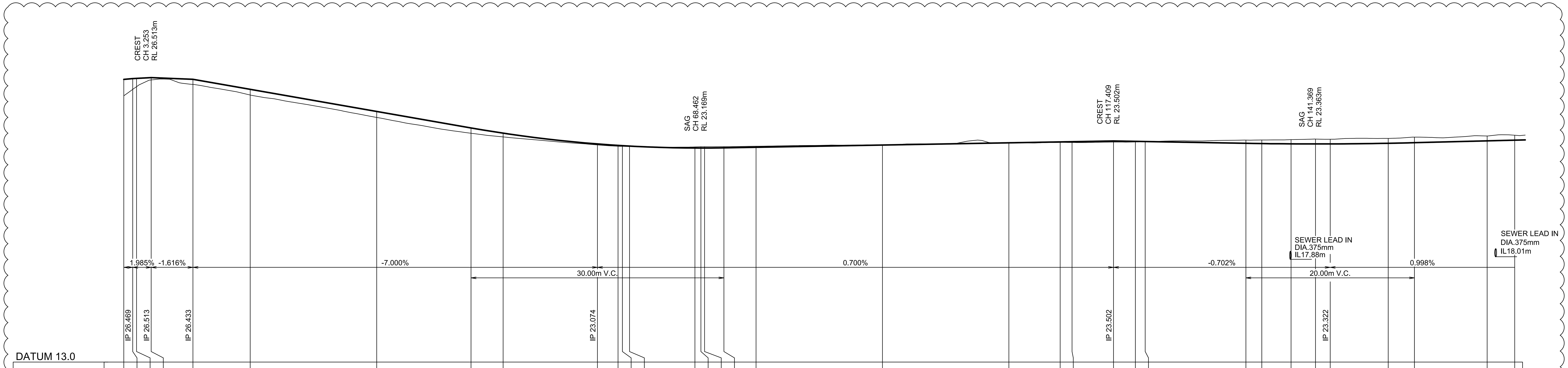
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
TYPICAL ROAD CROSS SECTIONS

PLAN No: 11035005/CC268 B
FILE No: 11035005CC268
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:01:24 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC268.dwg

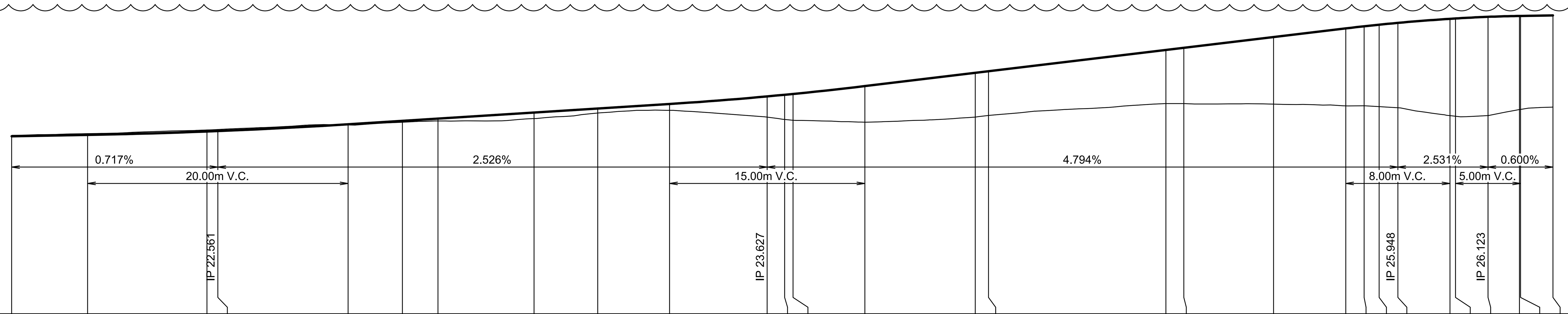


DATUM 13.0

CHAINAGE	WAE	DESIGN LINE GRADING	EXISTING SURFACE
0.000		26.427	25.648
1.059		26.469	25.955
1.510		26.478	26.084
3.253		26.513	26.406
8.204		26.433	26.188
15.000		25.957	25.685
30.000		24.907	24.620
41.189		24.124	23.870
45.000		23.875	23.692
56.189		23.362	23.315
58.628		23.293	23.255
59.147		23.280	23.248
60.000		23.261	23.239
67.755		23.170	23.221
68.462		23.169	23.227
68.894		23.169	23.227
71.189		23.179	23.233
75.000		23.205	23.254
90.000		23.310	23.319
105.000		23.415	23.402
111.077		23.458	23.433
112.494		23.468	23.432
117.409		23.502	23.452
120.000		23.484	23.456
121.163		23.476	23.468
133.113		23.392	23.545
135.000		23.380	23.549
138.467		23.367	23.566
141.369		23.363	23.594
143.113		23.364	23.586
150.000		23.395	23.625
153.113		23.422	23.685
161.735		23.508	23.741
165.000		23.540	23.776

LONGITUDINAL SECTION REACH 3 FP1
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

B



DATUM 17.0

CHAINAGE	WAE	DESIGN LINE GRADING	EXISTING SURFACE
0.000		22.448	22.473
5.831		22.489	22.526
15.000		22.593	22.639
15.831		22.606	22.654
25.831		22.814	22.793
30.000		22.919	22.877
32.735		22.988	22.915
40.110		23.174	22.988
45.000		23.298	23.160
50.512		23.437	23.242
58.012		23.669	23.035
59.349		23.719	22.962
60.000		23.745	22.937
65.512		23.986	22.871
73.988		24.392	23.036
75.000		24.441	23.084
88.629		25.094	23.448
90.000		25.160	23.448
96.894		25.490	23.433
102.433		25.756	23.380
103.848		25.821	23.380
105.000		25.870	23.367
106.433		25.925	23.325
110.433		26.049	23.085
110.855		26.059	23.069
113.355		26.111	23.083
115.768		26.137	23.266
115.855		26.138	23.271
118.341		26.153	23.342

LONGITUDINAL SECTION REACH 4 FP4
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1) 1:200 (AT A3) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:250 (AT A1) 1:500 (AT A3) — 5 0 5 10 15 20 25 METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18

J. WYNDHAM PRINCE
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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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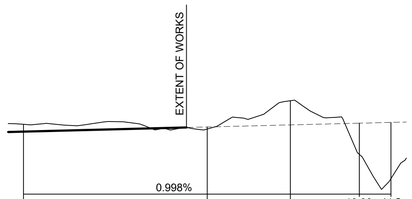
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
FOOTPATH LONGITUDINAL SECTIONS
SHEET 1

PLAN No: 11035005/CC269 B
FILE No: 11035005CC269
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:01:41 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC269.dwg



DATUM 17.0

WAE						
DESIGN LINE GRADING	23.540	23.690	23.758	23.814	23.840	
EXISTING SURFACE	23.776	23.624	24.548	22.798	22.002	
CHAINAGE	165.000	180.000	186.778	192.416	195.000	

LONGITUDINAL SECTION REACH 3 FP1

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
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ORIGIN:

CLIENT: Stockland

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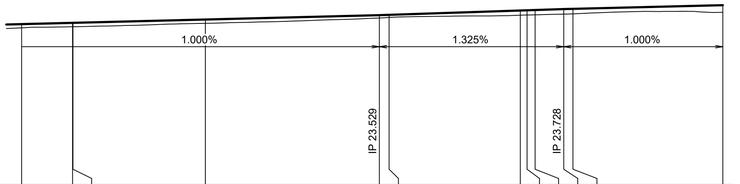
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
FOOTPATH LONGITUDINAL SECTIONS
SHEET 2

PLAN No: 11035005/CC270 B
FILE No: 11035005CC270
SHEET SIZE: A1 ORIGINAL

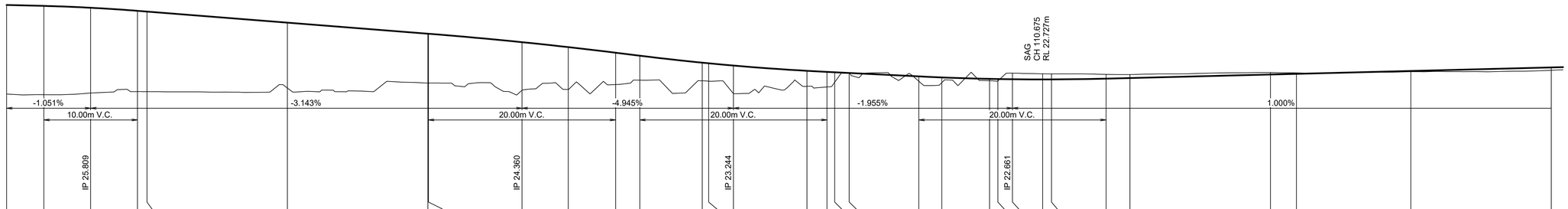
Plotted: 16 October , 2018 9:01:57 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC270.dwg



DATUM 18.0

WAE																														
DESIGN LINE GRADING	23.237	23.278	23.279	23.387	23.529	23.540	23.681	23.689	23.697	23.728	23.736	23.858																		
EXISTING SURFACE	23.117	23.151	23.152	23.263	23.438	23.456	23.530	23.536	23.541	23.566	23.572	23.621																		
CHAINAGE	165.000	169.158	169.192	180.000	194.196	195.000	205.706	206.254	206.916	209.250	210.000	222.239																		

LONGITUDINAL SECTION REACH 3 FP3
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 17.0

WAE																														
DESIGN LINE GRADING	25.903	25.861	25.783	25.651	25.619	25.148	24.676	24.674	24.315	24.104	23.866	23.738	23.442	23.415	23.319	23.094	23.048	23.032	23.002	22.857	22.813	22.751	22.744	22.735	22.727	22.728	22.761	22.787	22.937	22.964	23.087	23.237
EXISTING SURFACE	22.104	22.076	22.146	22.208	22.207	22.360	22.573	22.573	22.262	22.298	22.510	22.696	22.667	22.652	22.143	22.435	22.406	22.609	22.994	22.677	22.588	22.671	22.663	22.995	22.968	22.962	22.941	22.935	23.019	23.007	23.055	23.117
CHAINAGE	0.000	3.981	8.981	13.981	15.000	30.000	45.000	45.061	55.061	60.000	65.061	67.636	74.308	75.000	77.636	85.498	87.636	88.457	90.000	97.445	99.902	105.000	105.886	107.445	110.675	111.612	117.445	120.000	135.000	137.770	150.000	165.000

LONGITUDINAL SECTION REACH 3 FP3
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
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ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
FOOTPATH LONGITUDINAL SECTIONS
SHEET 3

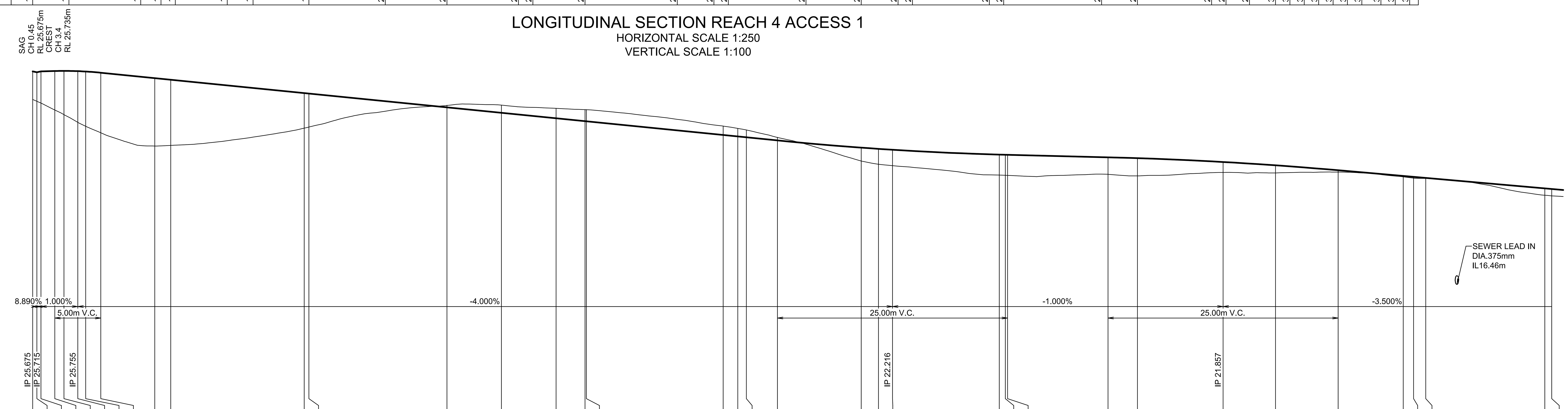
PLAN No: 11035005/CC271 B
FILE No: 11035005CC271
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:02:13 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC271.dwg

CHAINAGE	DESIGN LINE GRADING	EXISTING SURFACE	WAE
165.000	20.607	20.308	
168.933	20.470	20.230	
176.731	20.258	20.072	
178.933	20.221	20.040	
180.000	20.207	20.017	
186.132	20.169	20.055	
188.933	20.177	20.026	
195.000	20.211	19.990	
203.303	20.258	20.040	
210.000	20.297	20.065	
217.767	20.341	20.140	
218.634	20.346	20.136	
225.000	20.382	20.175	
235.017	20.439	20.227	
239.001	20.462	20.286	
240.000	20.468	20.302	
249.001	20.586	20.423	
255.000	20.724	20.524	
259.001	20.843	20.647	
259.302	20.852	20.660	
268.911	21.164	20.919	
270.000	21.199	20.916	
281.111	21.558	20.846	
285.000	21.684	20.837	
293.056	21.945	20.666	
293.175	21.949	20.664	
297.175	22.078	20.735	
300.000	22.169	21.089	
301.175	22.207	21.287	
302.453	22.247	21.550	
304.453	22.291	22.030	
305.641	22.298	22.304	
306.453	22.295	22.442	
306.928	22.291	22.486	
311.447	22.254	22.445	
311.637	22.254	22.441	
312.087	22.294	22.436	

LONGITUDINAL SECTION REACH 4 ACCESS 1

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



CHAINAGE	DESIGN LINE GRADING	EXISTING SURFACE	WAE
0.000	25.715	24.495	
0.450	25.675	24.416	
0.900	25.715	24.337	
2.400	25.730	24.036	
3.400	25.735	23.834	
4.900	25.724	23.501	
5.758	25.708	23.331	
7.400	25.655	23.041	
13.256	25.421	22.471	
15.000	25.351	22.498	
29.490	24.772	23.248	
30.000	24.751	23.298	
45.000	24.151	24.243	
50.910	23.915	24.249	
56.856	23.677	24.109	
60.000	23.551	24.053	
60.147	23.546	24.050	
75.000	22.951	23.338	
76.588	22.888	23.238	
77.522	22.851	23.168	
80.893	22.716	22.850	
90.000	22.401	21.819	
91.870	22.349	21.679	
93.393	22.309	21.619	
105.000	22.100	21.209	
105.649	22.093	21.200	
105.893	22.091	21.197	
116.802	21.982	21.250	
120.000	21.944	21.177	
129.302	21.778	21.329	
135.000	21.634	21.304	
141.802	21.419	21.349	
148.873	21.172	21.133	
150.000	21.132	21.078	
151.313	21.086	21.063	
164.251	20.633	20.335	
165.000	20.607	20.308	

LONGITUDINAL SECTION REACH 4 ACCESS 1

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1) 1:200 (AT A3) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:250 (AT A1) 1:500 (AT A3) — 5 0 5 10 15 20 25 METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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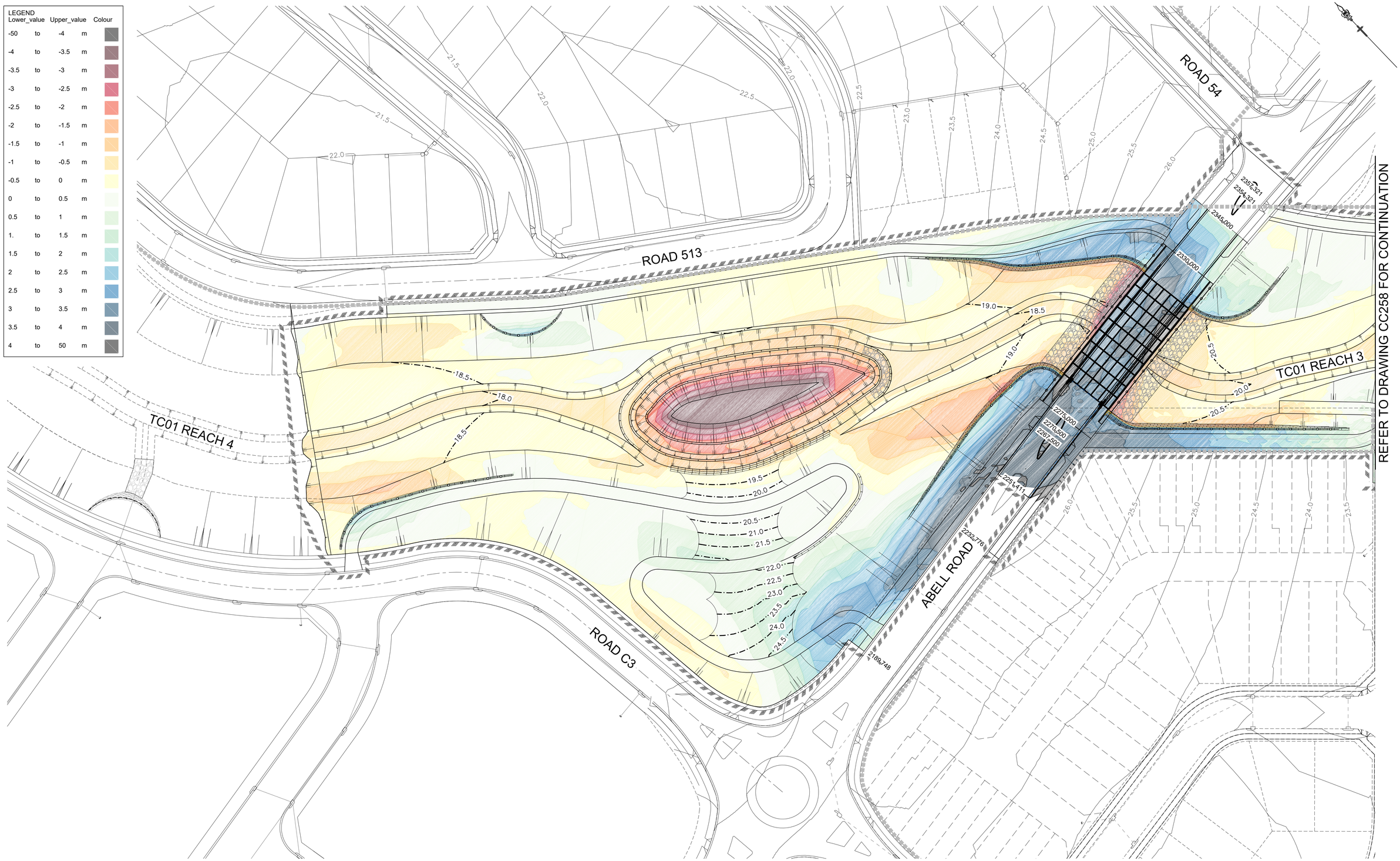
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
FOOTPATH LONGITUDINAL SECTIONS
SHEET 4

PLAN No: 11035005/CC272 B
FILE No: 11035005CC272
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:02:28 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC272.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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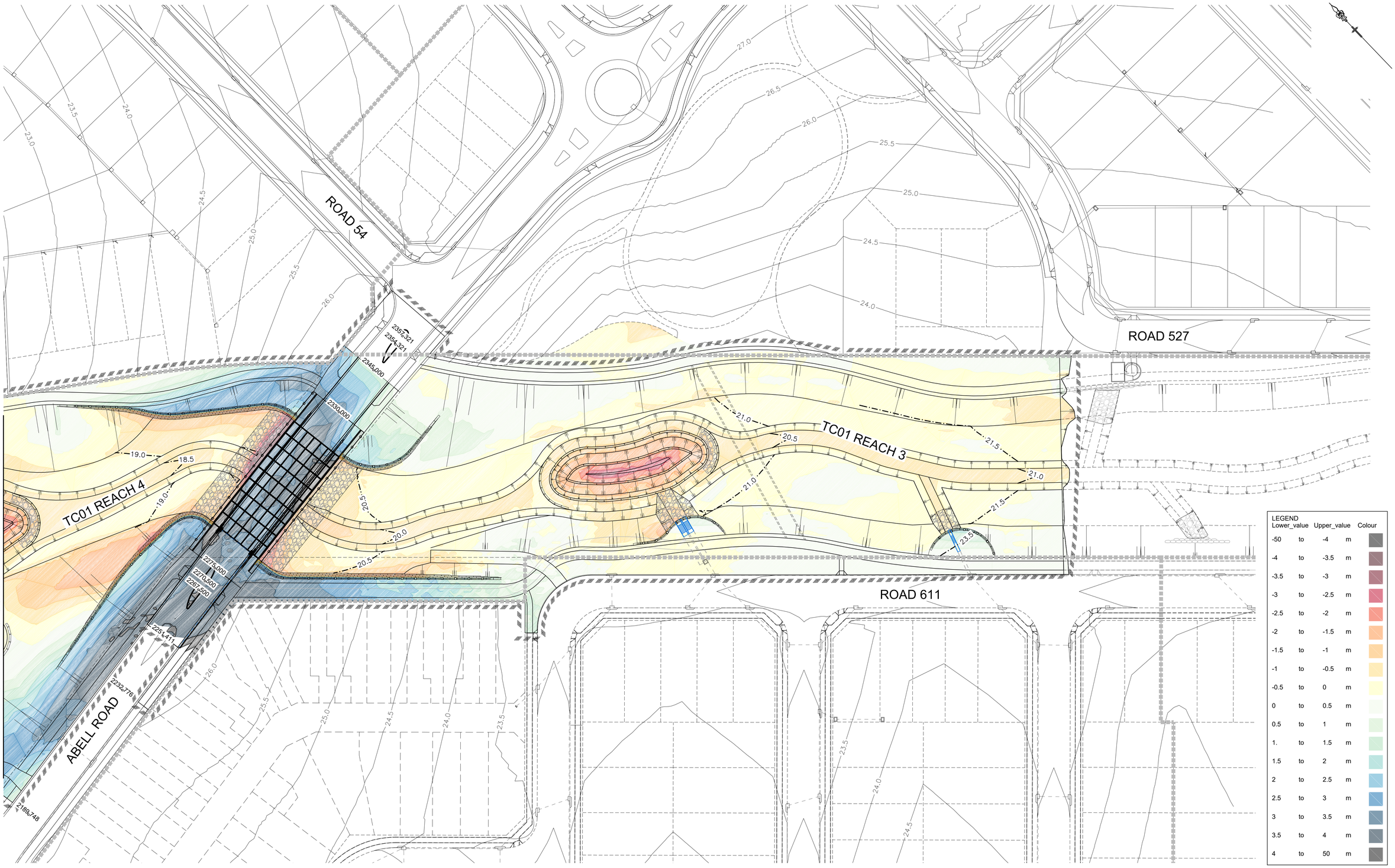
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
CUT/FILL PLAN
SHEET 1

PLAN No: 11035005/CC273 B
FILE No: 11035005CC273
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:03:00 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC273.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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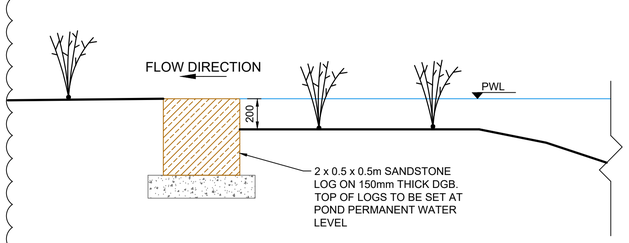
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

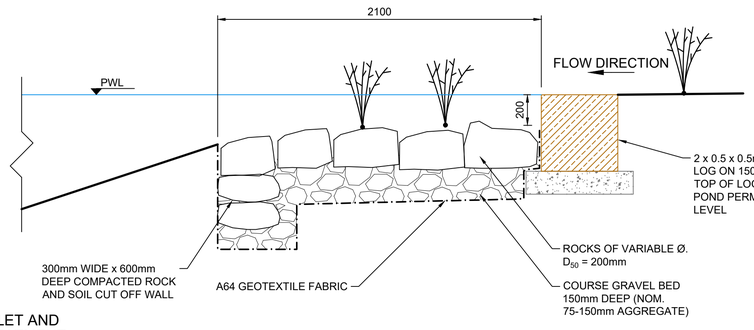
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
CUT/FILL PLAN
SHEET 2

PLAN No: 11035005/CC274 B
FILE No: 11035005CC274
SHEET SIZE: A1 ORIGINAL

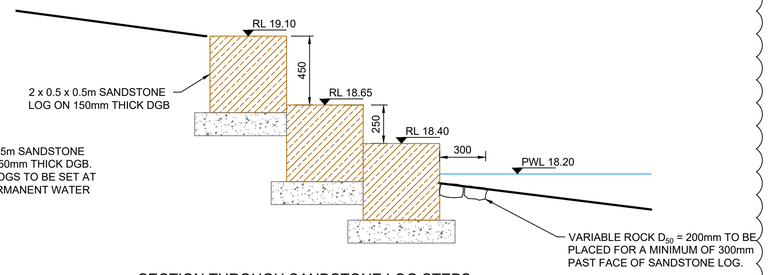
Plotted: 16 October , 2018 9:03:33 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC274.dwg



POND	LINEAR LENGTH OF ROCK SCOUR PROTECTION (m)	
	UPSTREAM	DOWNSTREAM
TC01 REACH 3	16	19
TC01 REACH 4	21	25

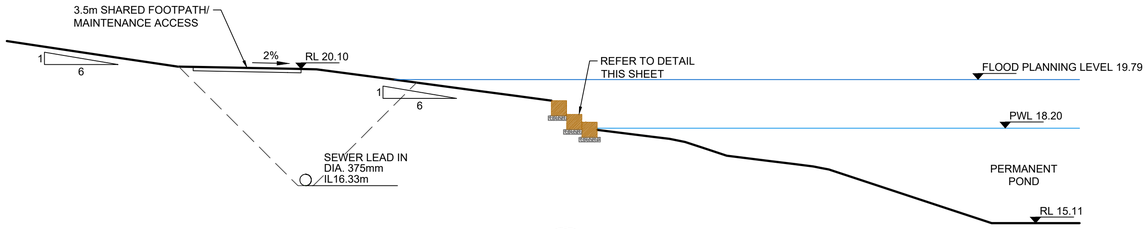


TYPCAL POND INLET AND OUTLET ROCK TREATMENT
SCALE 1:20

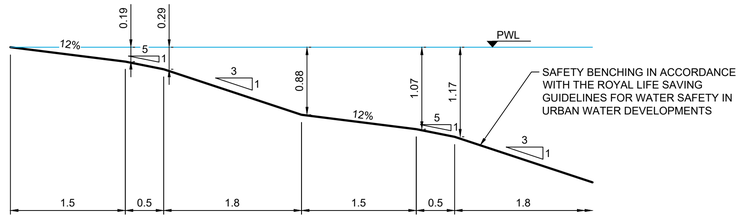


SECTION THROUGH SANDSTONE LOG STEPS
SCALE 1:20

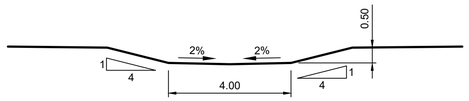
B



SECTION A CC257
SCALE H 1:100
V 1:100



SECTION THROUGH TYPICAL SAFETY BENCHING
SCALE 1:40



SECTION B CC257
SCALE H 1:100
V 1:100

TYPICAL SECTION THROUGH LOW FLOW CHANNEL

1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES
1:25(AT A1) 500 0 500 1000 1500 2000 2500 MILLIMETRES
1:100 (AT A1) 1:200 (AT A3) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

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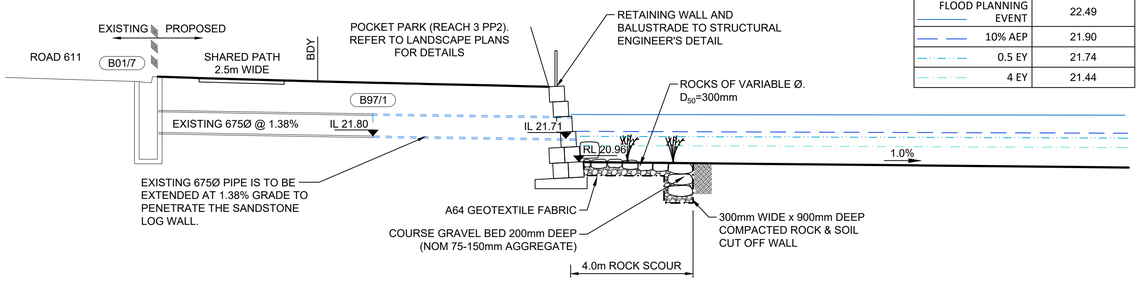
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
DETAIL SECTIONS
SHEET 1

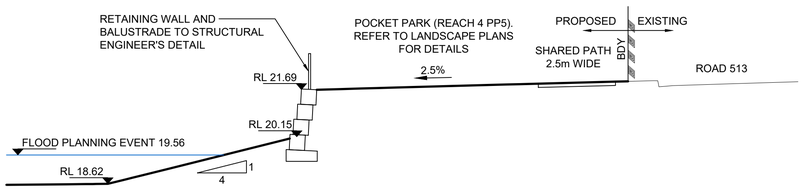
PLAN No: 11035005/CC275 B
FILE No: 11035005CC275
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October, 2018 9:03:59 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC275.dwg

TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	22.49
10% AEP	21.90
0.5 EY	21.74
4 EY	21.44



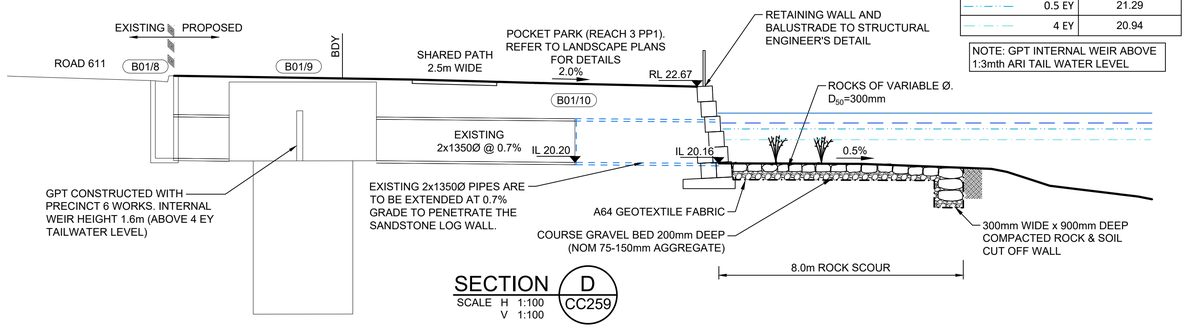
SECTION E CC259
SCALE H 1:100
V 1:100



SECTION C CC257
SCALE H 1:100
V 1:100

TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	21.81
10% AEP	21.49
0.5 EY	21.29
4 EY	20.94

NOTE: GPT INTERNAL WEIR ABOVE 1:3mth ARI TAIL WATER LEVEL



SECTION D CC259
SCALE H 1:100
V 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
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ORIGIN:

CLIENT: Stockland

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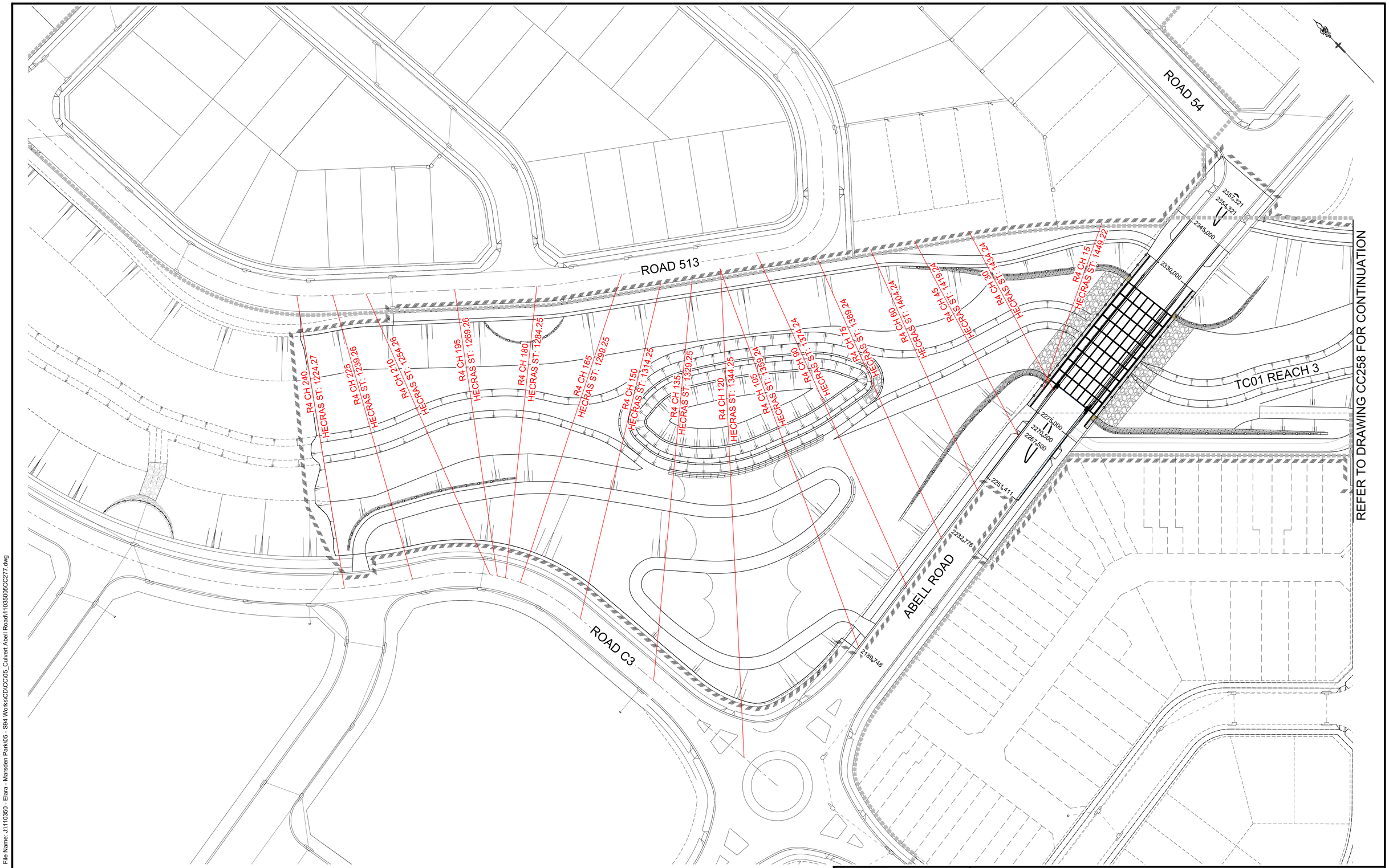
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
DETAIL SECTIONS
SHEET 2

PLAN No: 11035005/CC276 B
FILE No: 11035005CC276
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:04:15 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC05_Culvert Abell Road\11035005CC276.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50

METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:

DATUM:

ORIGIN:

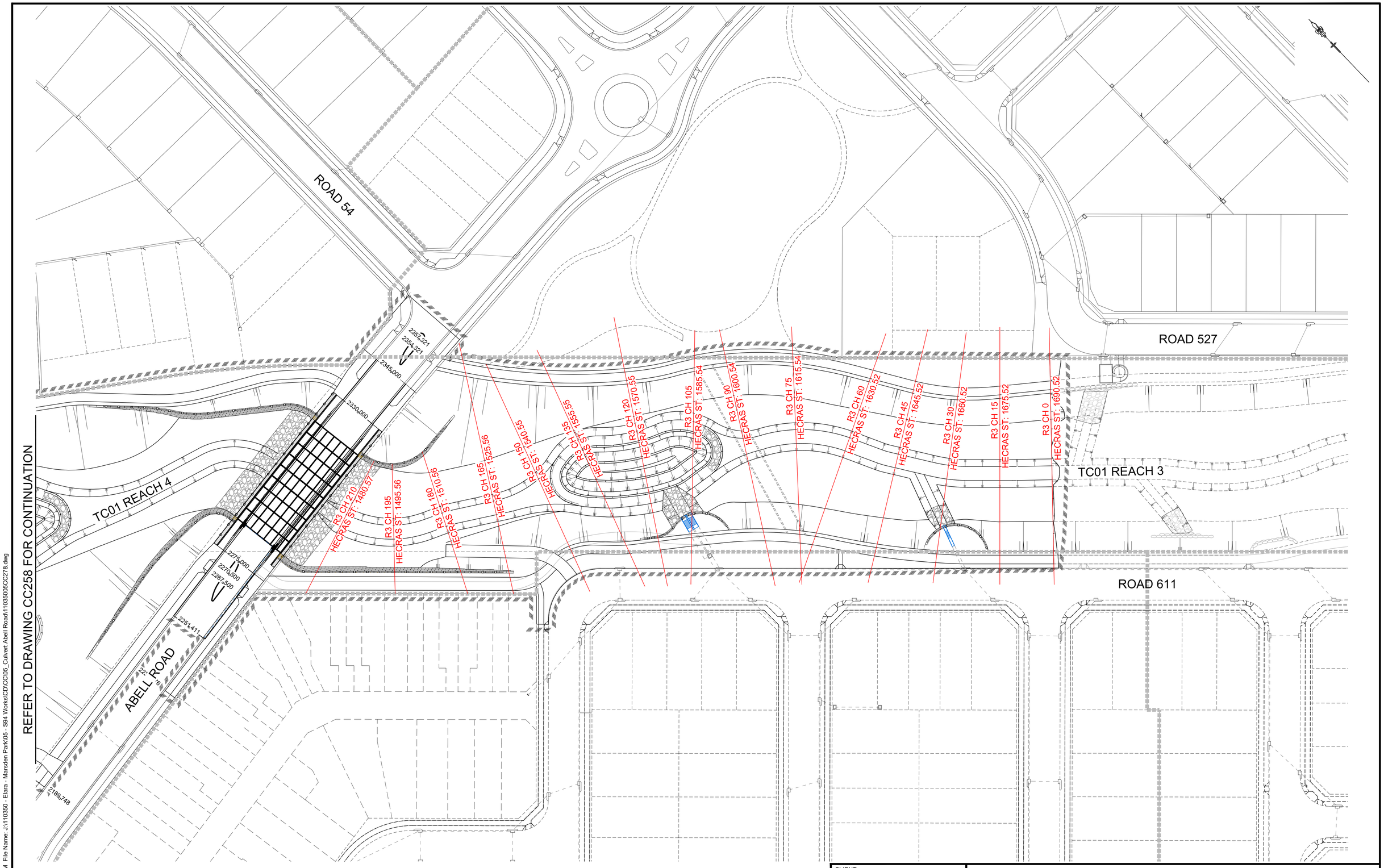
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS PLAN
SHEET 1

PLAN No: 11035005/CC277 B

FILE No: 11035005CC277

SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:04:38 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC05_Culvert Abell Road\11035005CC277.dwg



B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN:

CLIENT:
Stockland

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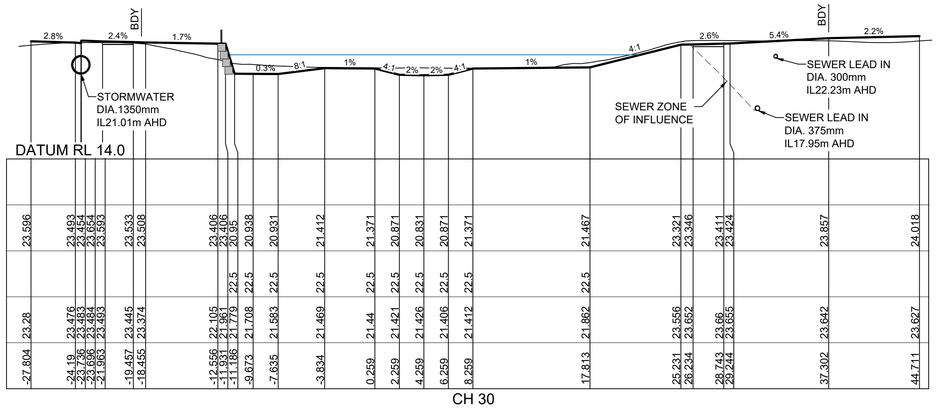
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS PLAN
SHEET 2

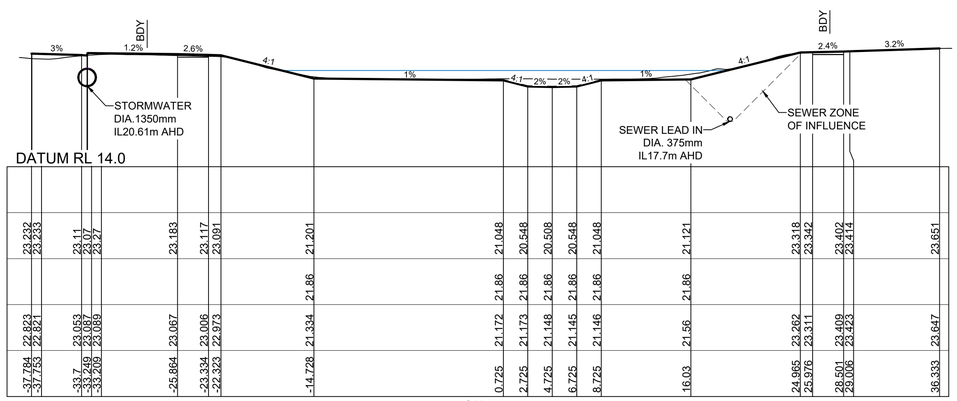
PLAN No: 11035005/CC278 B
FILE No: 11035005CC278
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October, 2018 9:05:01 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC278.dwg



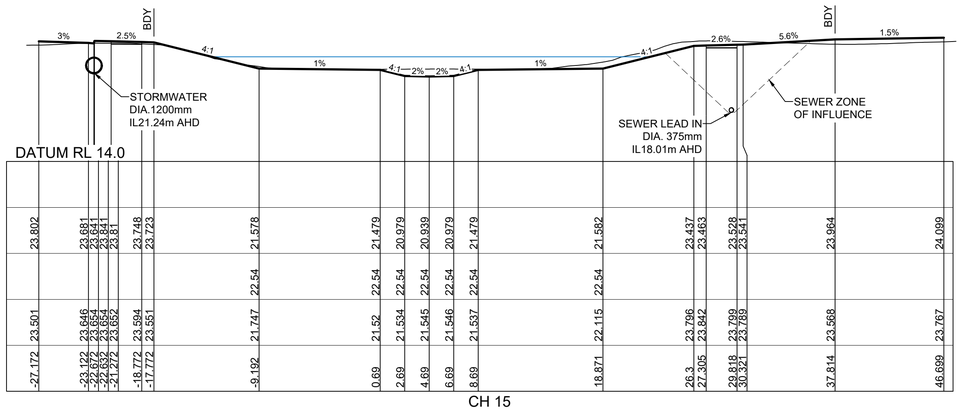
23.596	23.493	23.454	23.454	23.533	23.508	23.406	23.406	20.95	20.938	20.931	21.412	21.371	20.871	20.831	20.871	21.371	21.467	23.321	23.346	23.411	23.324	23.857	24.018
23.28	23.476	23.483	23.484	23.445	23.374	22.105	21.961	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	23.556	23.652	23.66	23.655	23.642	23.627
-27.804	-24.19	-23.736	-23.706	-19.457	-18.455	-12.556	-11.931	-11.186	-9.673	-7.635	-3.834	0.259	2.259	4.259	6.259	8.259	17.813	25.231	26.234	28.743	29.244	37.302	44.711

CH 30



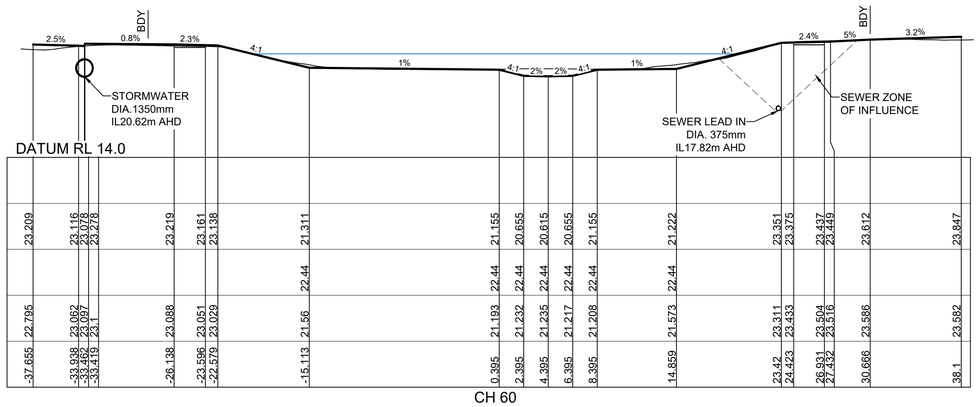
23.232	23.11	23.07	23.27	23.183	23.117	23.091	21.201	21.048	20.548	20.508	20.548	21.048	21.121	23.318	23.342	23.402	23.414	23.651
22.823	23.053	23.087	23.089	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	21.86	23.262	23.311	23.409	23.423	23.647
-37.784	-33.7	-33.249	-33.209	-25.864	-23.334	-22.323	-14.728	0.725	2.725	4.725	6.725	8.725	16.03	24.985	25.976	28.501	29.066	38.333

CH 75



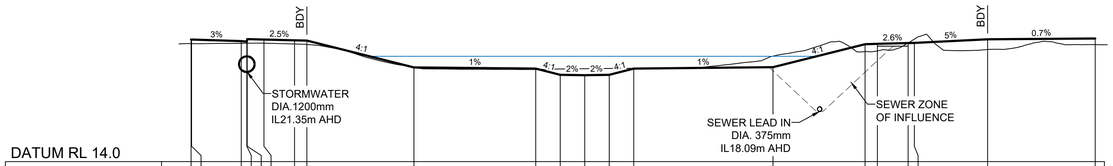
23.802	23.681	23.641	23.641	23.748	23.723	21.578	21.479	20.979	20.939	20.979	21.479	21.582	23.437	23.463	23.528	23.541	23.984	24.099
23.501	23.646	23.654	23.654	23.652	23.594	22.54	22.54	22.54	22.54	22.54	22.54	22.54	23.796	23.842	23.799	23.789	23.568	23.767
-27.172	-23.122	-22.672	-22.672	-21.272	-18.772	-17.772	-9.192	0.69	2.69	4.69	6.69	8.69	18.871	22.115	26.3	27.305	29.818	30.321	37.814	46.699

CH 15



23.209	23.116	23.078	23.278	23.219	23.161	23.138	21.311	21.155	20.655	20.615	20.655	21.155	21.222	23.351	23.375	23.437	23.449	23.612	23.847
22.795	23.062	23.097	23.1	23.088	23.051	23.029	22.44	22.44	22.44	22.44	22.44	22.44	22.44	23.311	23.433	23.504	23.516	23.586	23.582
-37.655	-33.938	-33.462	-33.419	-26.138	-23.596	-22.579	-15.113	0.395	2.395	4.395	6.395	8.395	14.859	23.42	24.423	26.931	27.432	30.686	38.1

CH 60

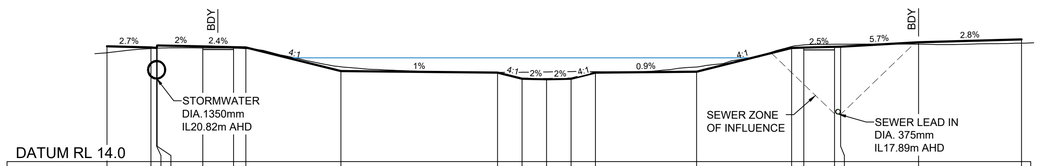


WAE																							
DESIGN SURFACE LEVEL	23.957	23.836	23.796	23.795	23.903	23.877	21.69	21.587	21.087	21.047	21.087	21.587	21.705	23.583	23.868	23.873	23.866	23.983	24.045
FLOOD PLANNING EVENT							22.59	22.59	22.59	22.59	22.59	22.59	22.59						
EXISTING SURFACE LEVEL	23.634	23.654	23.661	23.662	23.597	23.554	21.663	21.52	21.554	21.583	21.602	21.611	22.607	22.981	23.068	23.676	23.92	23.151	23.545
OFFSET	-27.394	-23.299	-22.849	-21.449	-18.948	-17.948	-9.203	0.736	2.736	4.736	6.736	8.736	20.108	27.621	28.625	31.133	31.635	37.619	46.401

CH 0

TC01 REACH 3

SCALE 1:250



WAE																							
DESIGN SURFACE LEVEL	23.407	23.31	23.271	23.272	23.4	23.339	23.315	21.391	21.263	20.763	20.723	20.763	21.263	21.338	23.277	23.302	23.365	23.377	23.737	23.976
FLOOD PLANNING EVENT								22.47	22.47	22.47	22.47	22.47	22.47	22.47						
EXISTING SURFACE LEVEL	22.885	23.227	23.259	23.26	23.277	23.259	23.22	21.737	21.282	21.29	21.32	21.348	21.341	21.715	23.386	23.523	23.575	23.579	23.581	23.666
OFFSET	-31.623	-28.032	-27.57	-27.528	-23.797	-21.289	-20.286	-12.536	0.249	2.249	4.249	6.249	8.249	16.499	24.255	25.255	27.755	28.255	34.618	43.025

CH 45

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
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P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

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DATUM:
ORIGIN:

CLIENT:
Stockland

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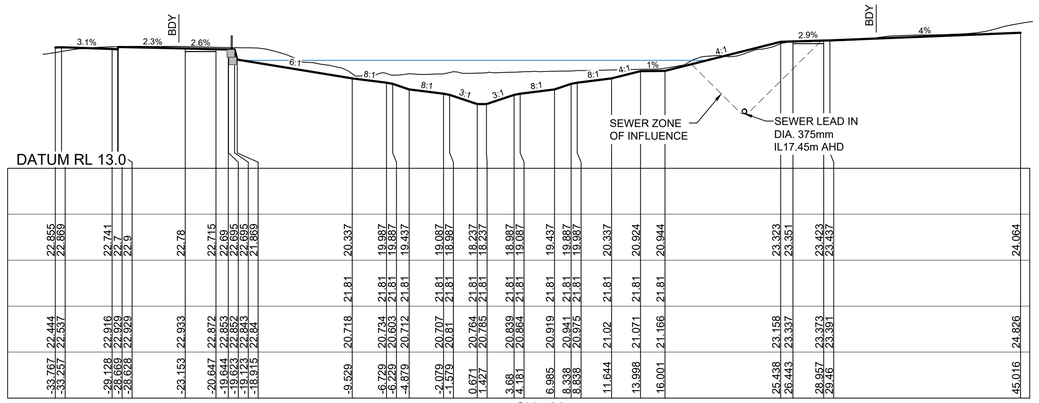
ISSUED FOR CONSTRUCTION APPROVAL

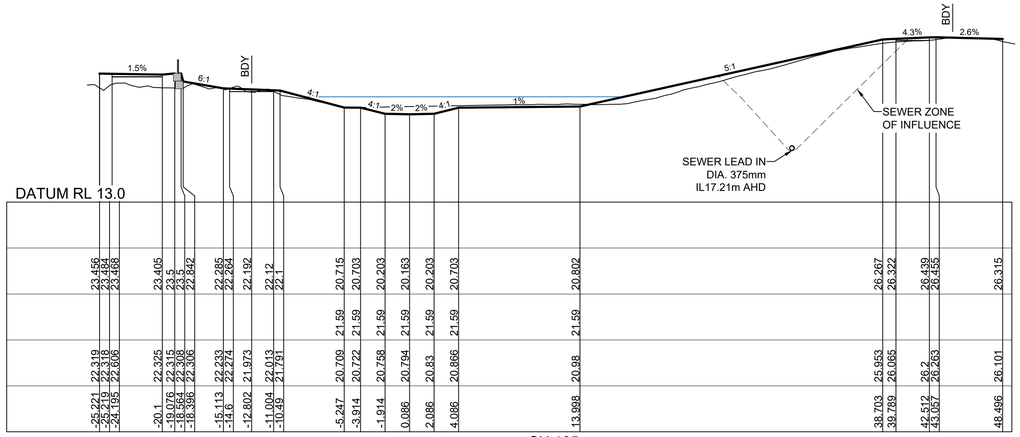
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS
SHEET 1

PLAN No: 11035005/CC279 B
FILE No: 11035005CC279
SHEET SIZE: A1 ORIGINAL

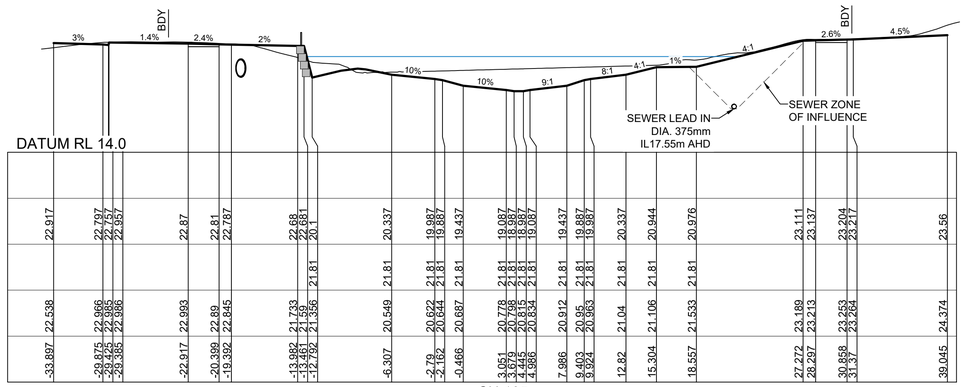
Plotted: 16 October, 2018 9:05:14 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC279.dwg



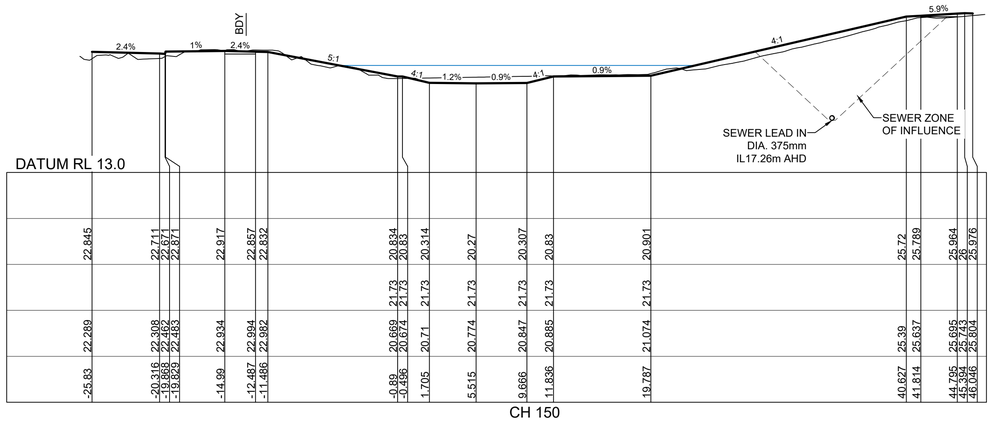
CH 120



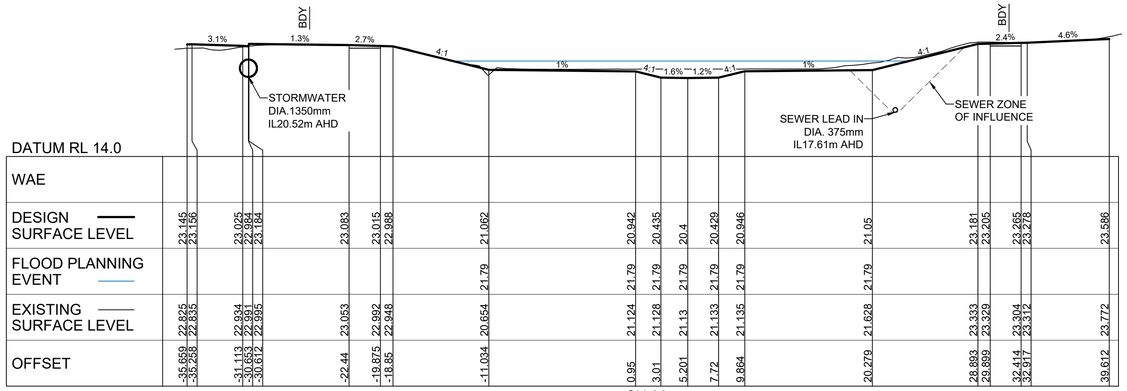
CH 165



CH 105



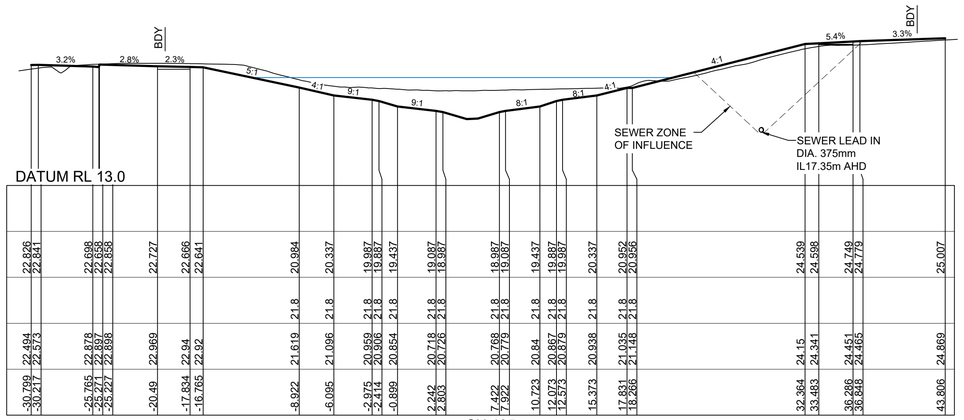
CH 150



CH 90

TC01 REACH 3

SCALE 1:250



CH 135

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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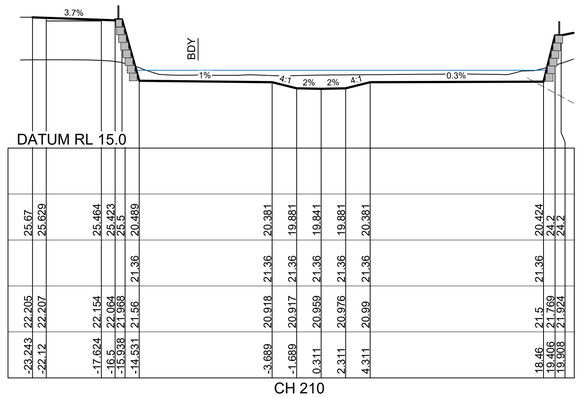
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS
SHEET 2

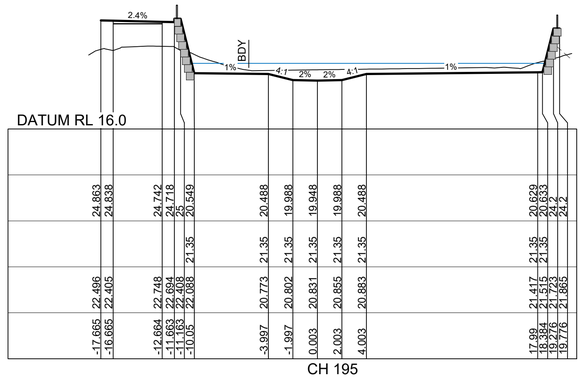
PLAN No: 11035005/CC280 B

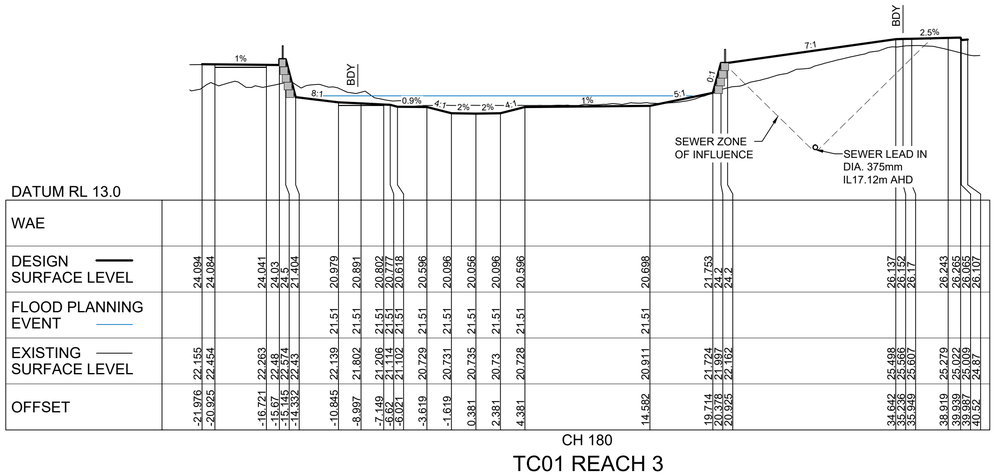
FILE No: 11035005CC280

SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:05:26 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC280.dwg







TC01 REACH 3

SCALE 1:250

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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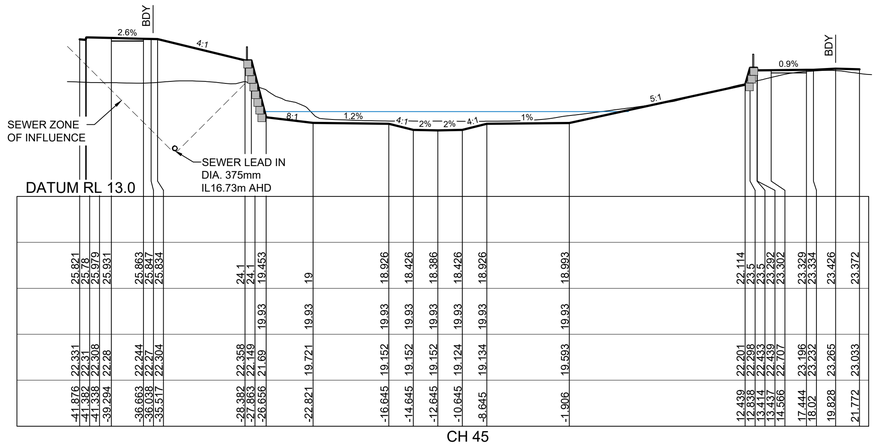
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS
SHEET 3

PLAN No: 11035005/CC281 B

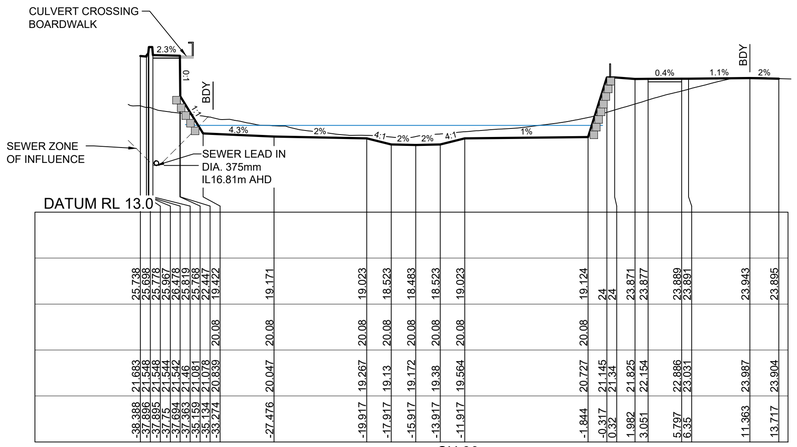
FILE No: 11035005CC281

SHEET SIZE: A1 ORIGINAL

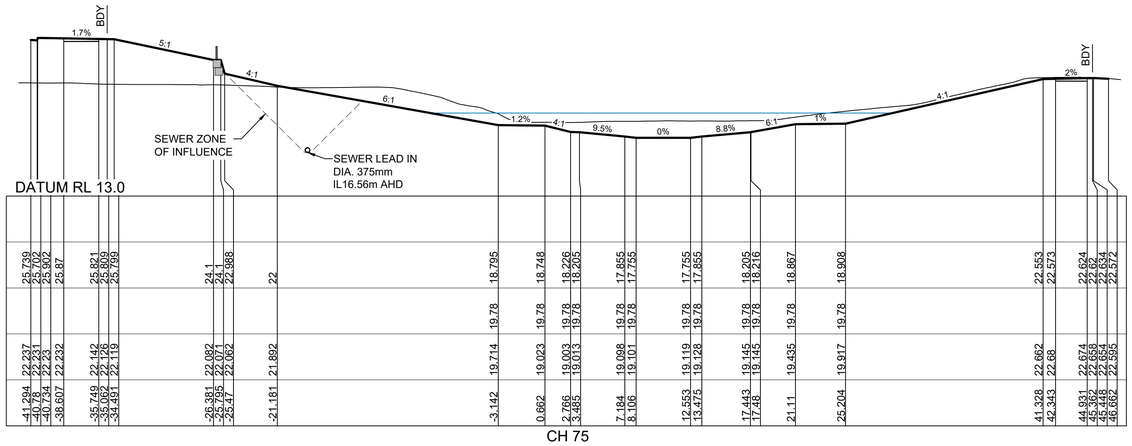
Plotted: 16 October , 2018 9:05:39 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC281.dwg



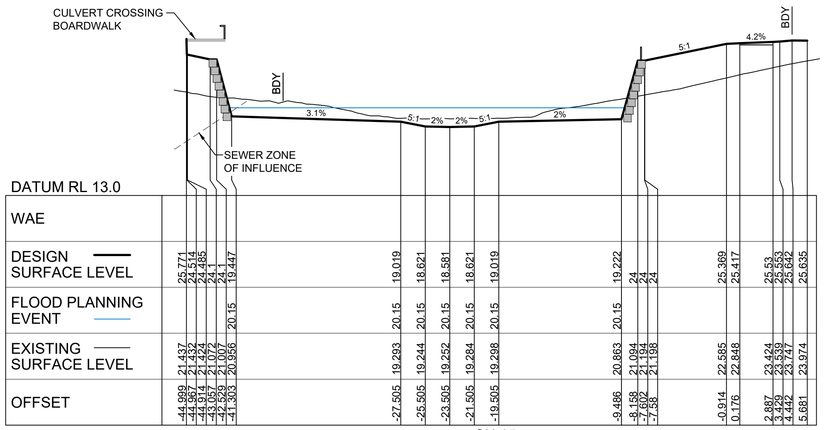
CH 45



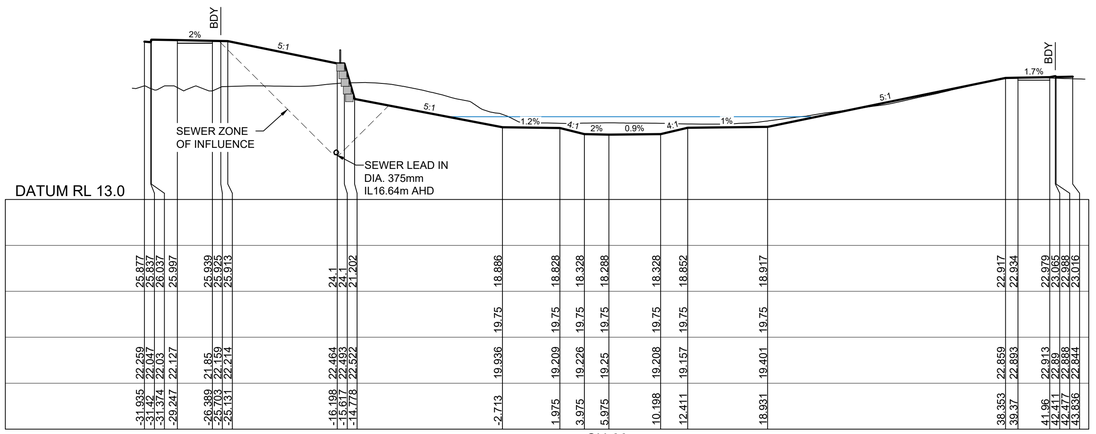
CH 30



CH 75



CH 15



CH 60

TC01 REACH 4

SCALE 1:250

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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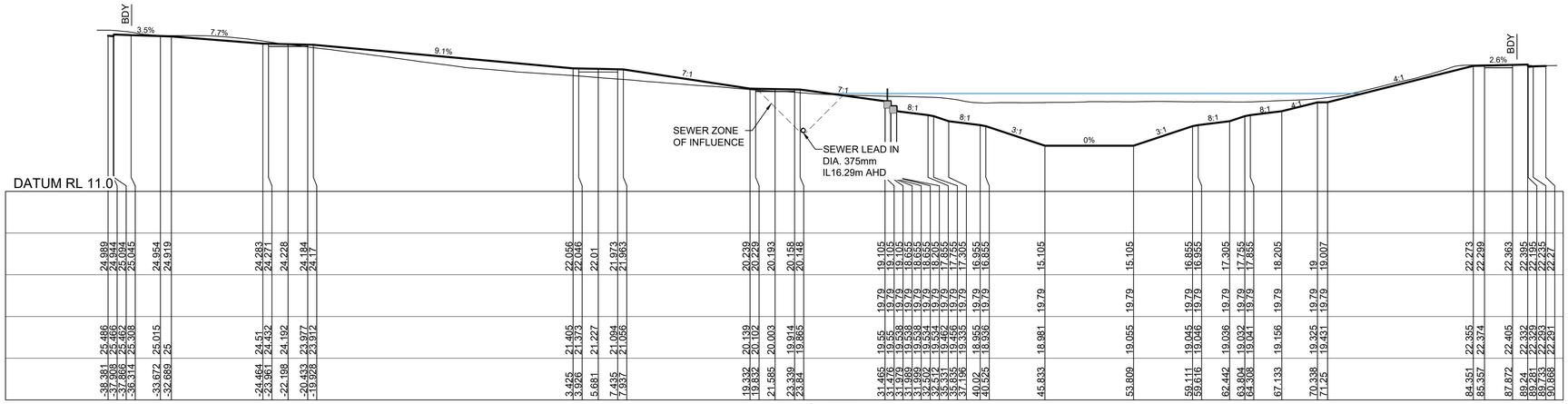
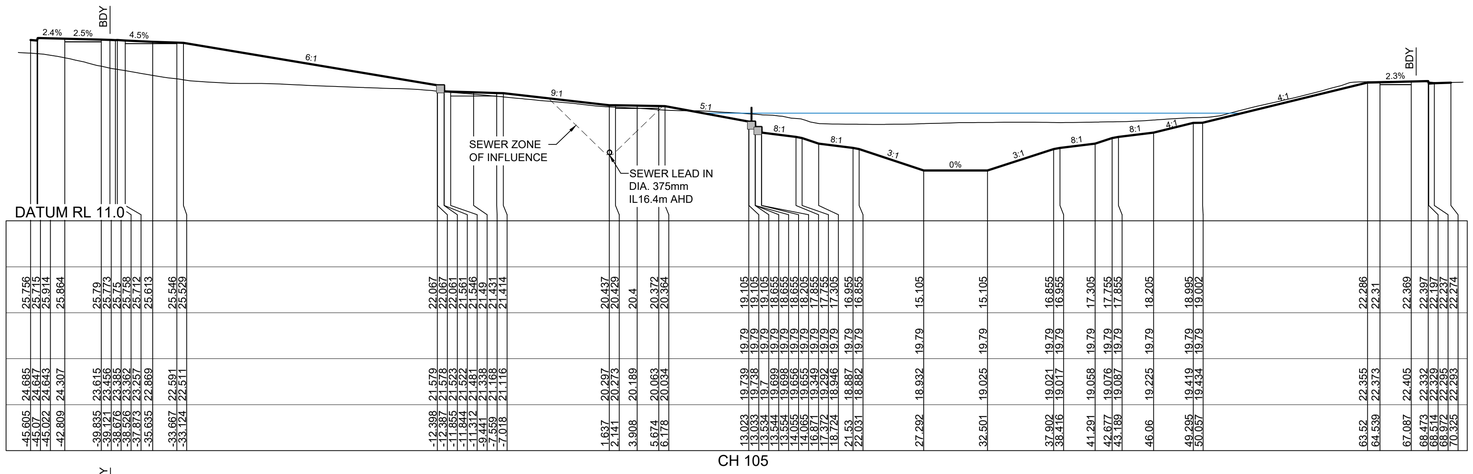
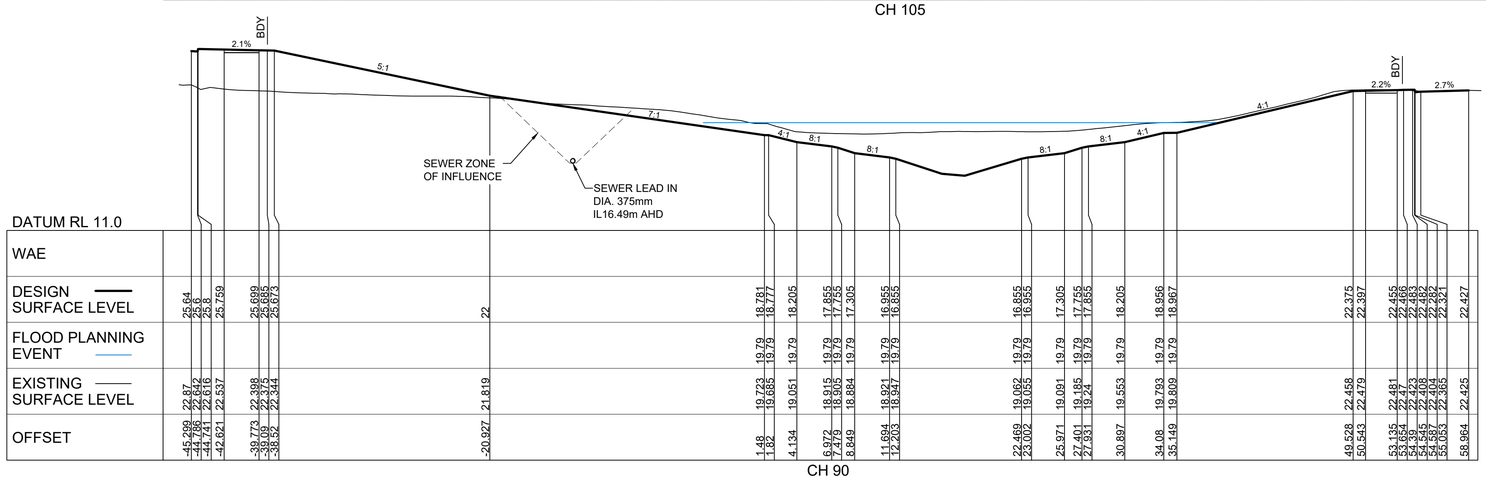
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS
SHEET 4

PLAN No: 11035005/CC282 B
FILE No: 11035005CC282
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:05:51 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC282.dwg







TC01 REACH 4

SCALE 1:250

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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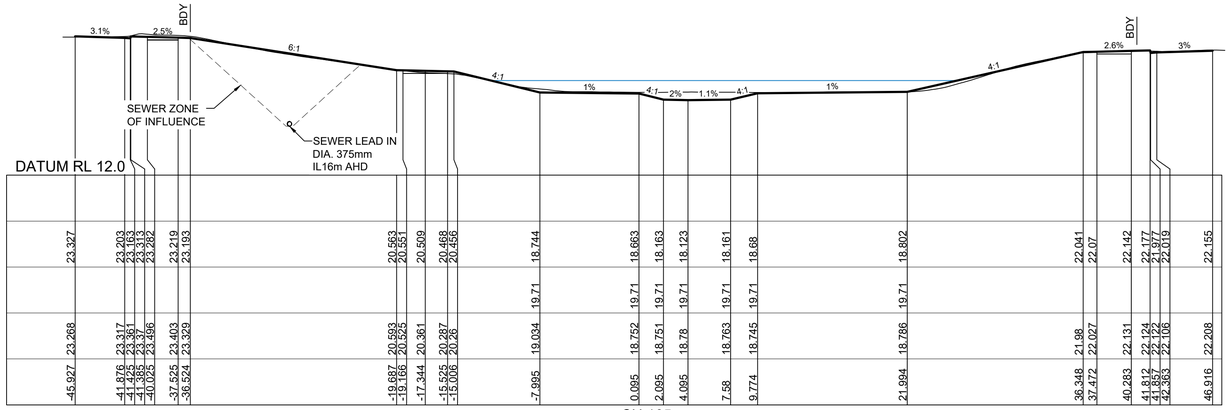
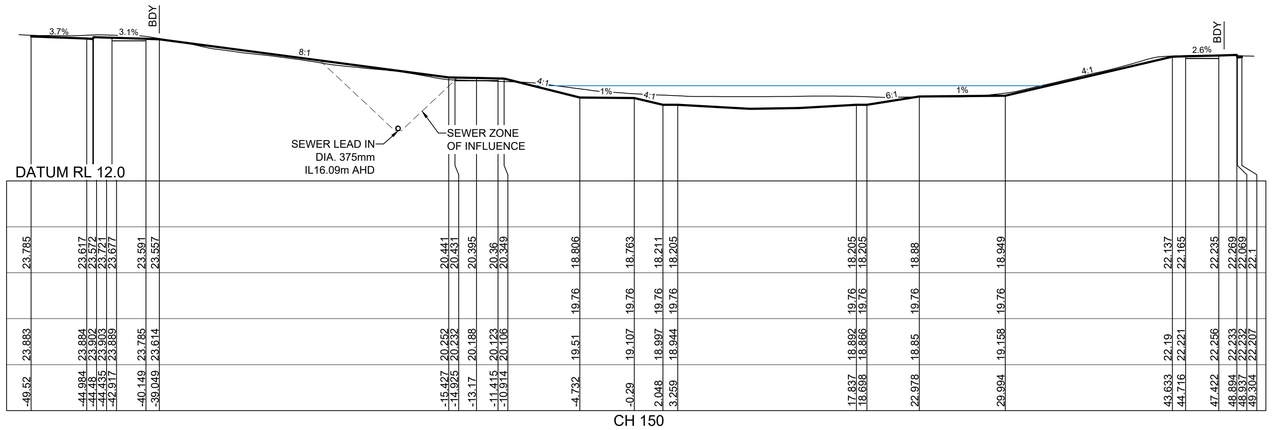
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS
SHEET 5

PLAN No: 11035005/CC283 B
FILE No: 11035005CC283
SHEET SIZE: A1 ORIGINAL

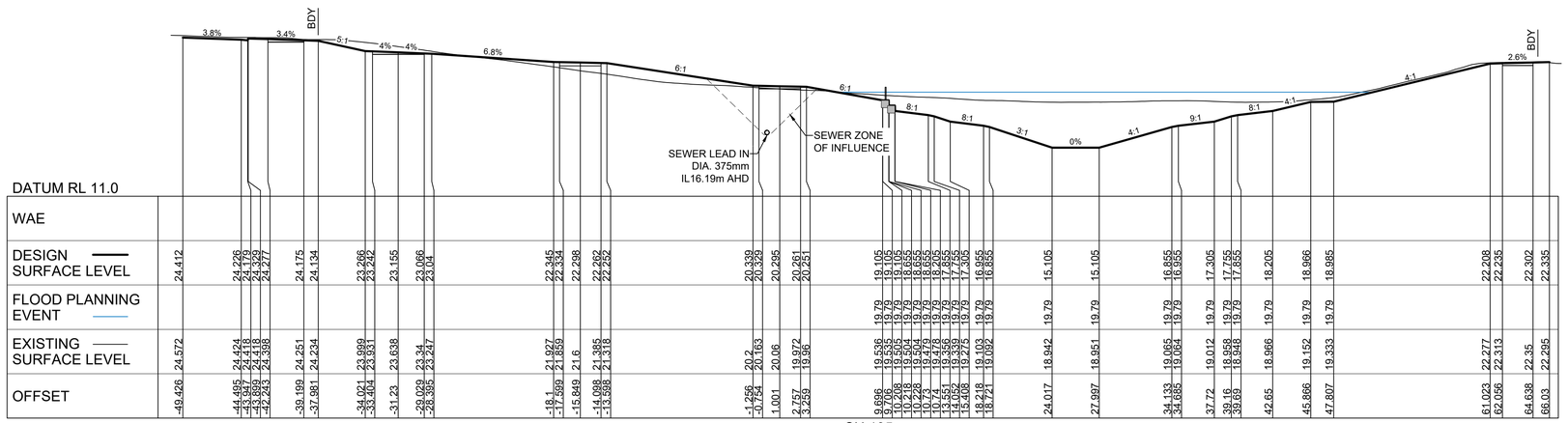
Plotted: 16 October , 2018 9:06:03 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC283.dwg



CH 165



CH 150



CH 135

TC01 REACH 4

SCALE 1:250

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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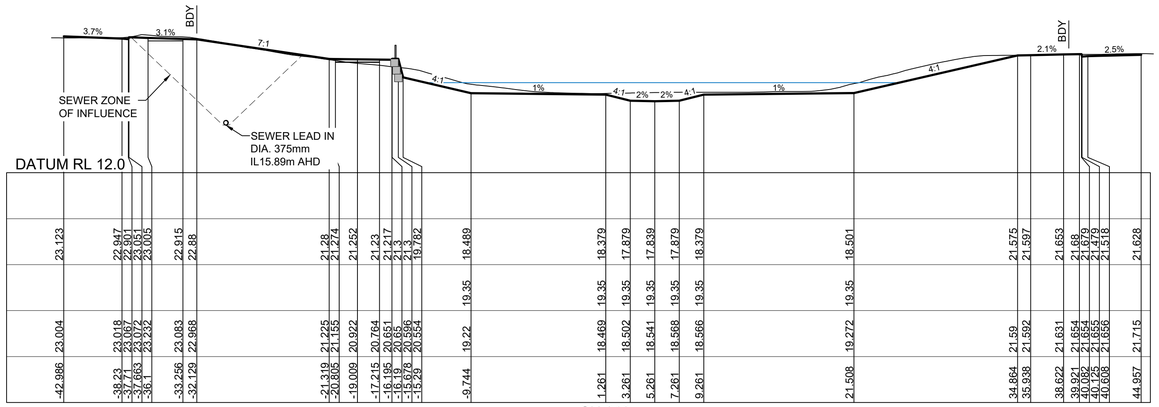
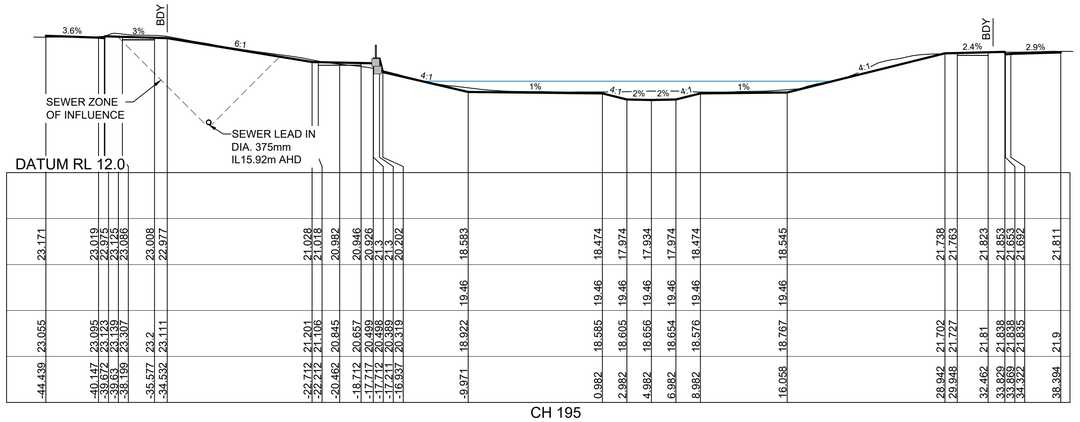
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS
SHEET 6

PLAN No: 11035005/CC284 B
FILE No: 11035005CC284
SHEET SIZE: A1 ORIGINAL

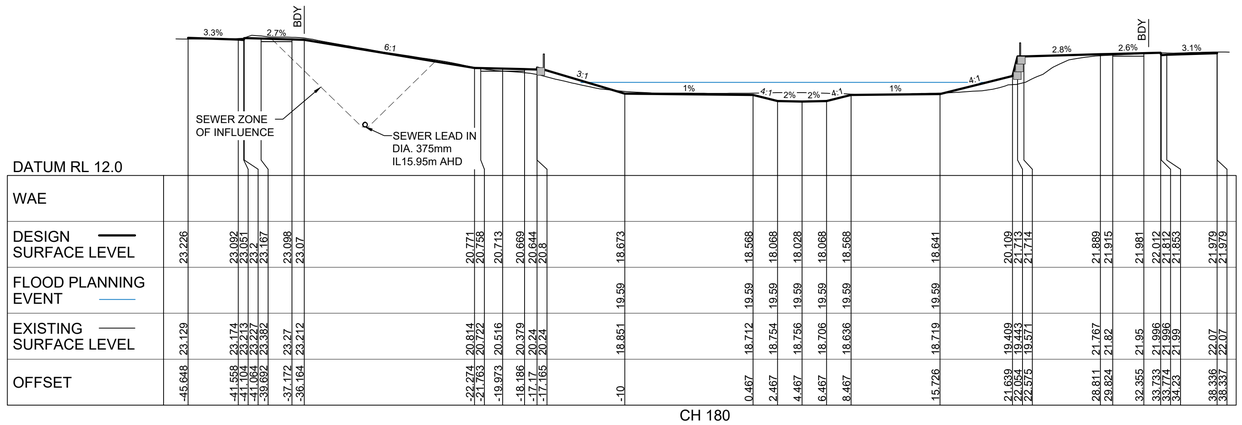
Plotted: 16 October , 2018 9:06:16 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC284.dwg



CH 210



CH 195



CH 180

TC01 REACH 4

SCALE 1:250

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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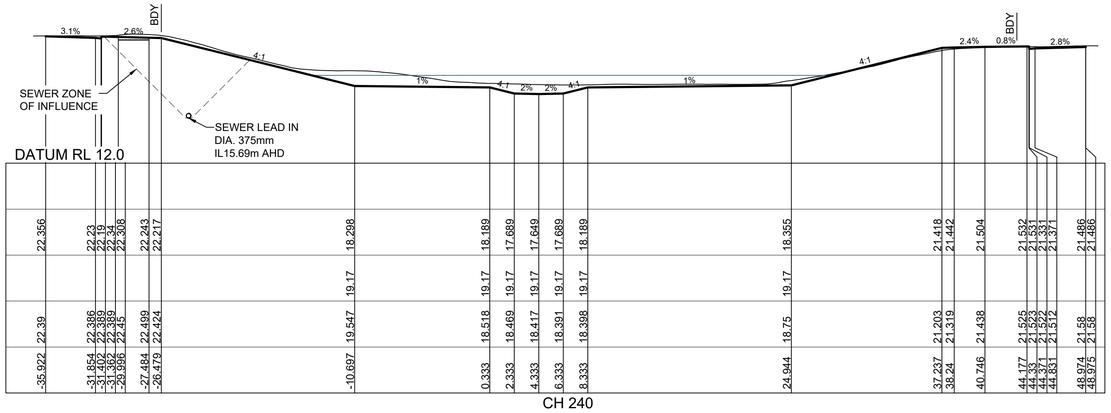
ISSUED FOR CONSTRUCTION APPROVAL

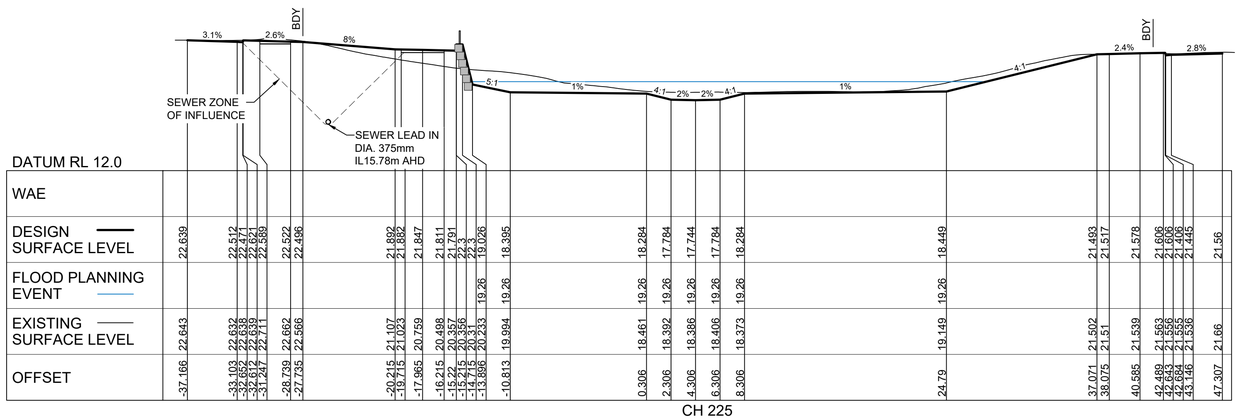
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS
SHEET 7

PLAN No: 11035005/CC285 B
FILE No: 11035005CC285
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:06:28 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC285.dwg



CH 240



CH 225

TC01 REACH 4

SCALE 1:250

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SITE SECTIONS
SHEET 8

PLAN No: 11035005/CC286 B
FILE No: 11035005CC286
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:06:41 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC05_Culvert Abell Road\11035005CC286.dwg

DESIGN STORM 10% AEP HYDROLOGIC RESULTS

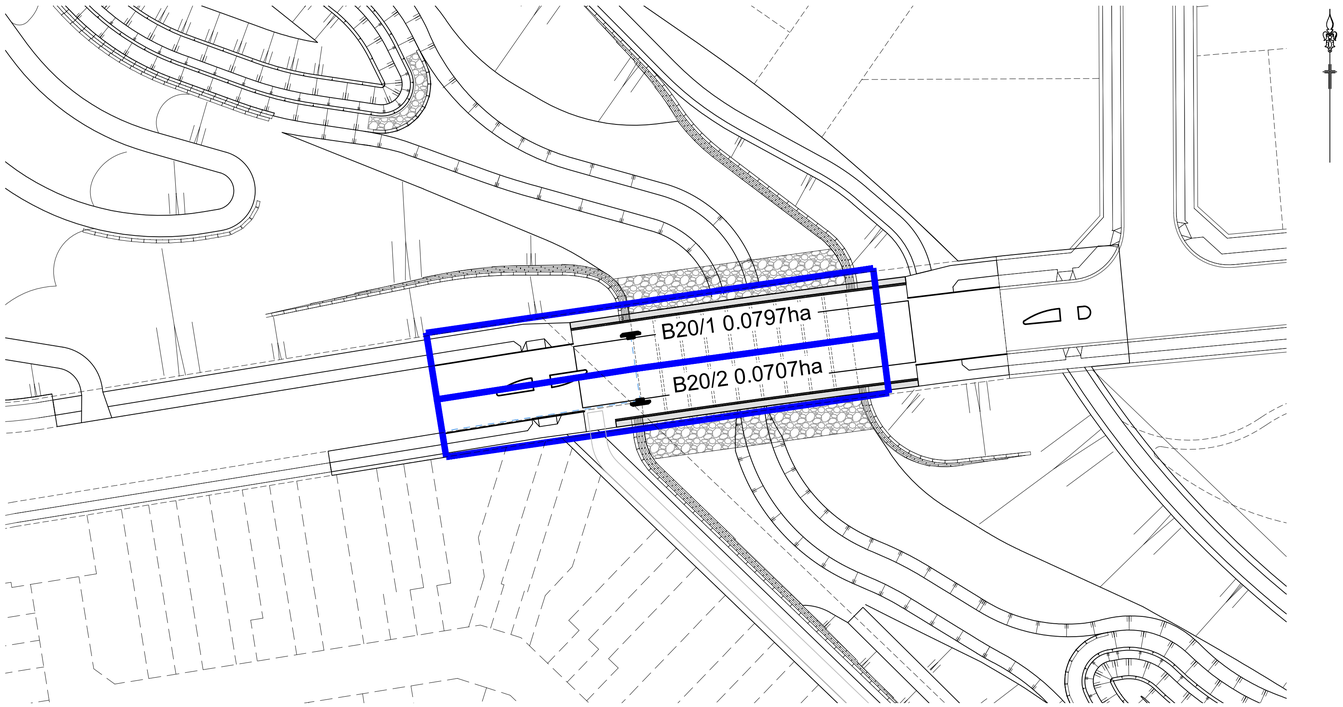
PIT NAME (-)	PIT TYPE (-)	CATCHMENT AREA (Ha)	PERCENT IMPERVIOUS (%)	Tc IMP (min)	Tc PERV (min)	CRITICAL STORM (min)	APPROACH FLOW (L/s)	CAPTURED FLOW (L/s)	UNCAPTURED FLOW (L/s)	GRATE DEPTH (mm)	ROAD GRADE (%)	ROAD CROSSFALL (%)	BYPASS PIT (-)	BYPASS CHANNEL FLOW (L/s)	U/S FLOW WIDTH (m)	U/S VxD (m/s^2)	D/S FLOW WIDTH (m)	D/S VxD (m/s^2)	COMMENTS (-)
B20/1	2.4 m lintel sag	0.08	95	5	5	25	31	60	0	61	0.1	3	B101/1	0					
B20/2	2.4 m lintel sag	0.071	85	5	5	25	27	52	0	56	0.1	3	B20/4	0					
B20/3	CAPPED STUB		0	5	5		0	0	0	0									CAPPED STUB

DESIGN STORM 10% AEP HYDRAULIC RESULTS

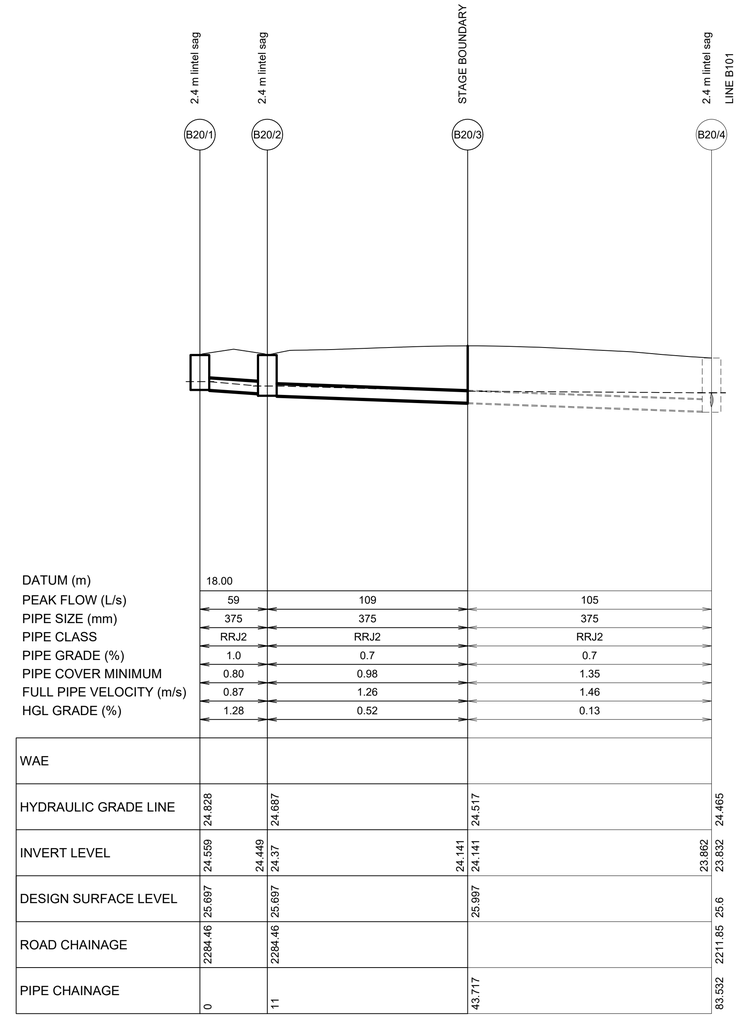
PIPE NAME (-)	PIPE DIAMETER (mm)	PIPE TYPE (-)	PIPE LENGTH (m)	PIPE GRADE (%)	CRITICAL STORM (min)	PEAK FLOW (L/s)	CAPACITY RATIO (-)	PEAK VELOCITY (m/s)	PIPE U/S IL (m)	PIPE D/S IL (m)	PIPE D/S DROP (m)	U/S PIT Ku (-)	D/S PIT Kw (-)	PIT LOSS (Ku.V'head) (m)	WSE LOSS (Kw.V'head) (m)	U/S PIPE HGL (m)	D/S PIPE HGL (m)	HGL GRADE (%)	MINIMUM COVER (m)	MINIMUM FREEBOARD (m)	COMMENTS
B20/1 to B20/2	375	RRJ2	11	1	25	59	0.31	0.87	24.559	24.449	0.079	4.5	4.5	0.17	0.17	24.828	24.687	1.28	0.8	0.869	
B20/2 to B20/3	375	RRJ2	32.72	0.7	25	109	0.69	1.26	24.37	24.141	0	7	7	0.3	0.3	24.687	24.517	0.52	0.98	1.01	

PIT SCHEDULE

PIT NAME (-)	PIT TYPE (-)	PIT EASTING (m)	PIT NORTHING (m)	PIT DEPTH (m)	COMMENTS
B20/1	2.4 m lintel sag	296966.171	6268806.307	1.339	
B20/2	2.4 m lintel sag	296967.765	6268795.423	1.499	



CATCHMENT PLAN
SCALE 1:500



LINE B20

1:500 (AT A1)
1:1000 (AT A3)
10 0 10 20 30 40 50
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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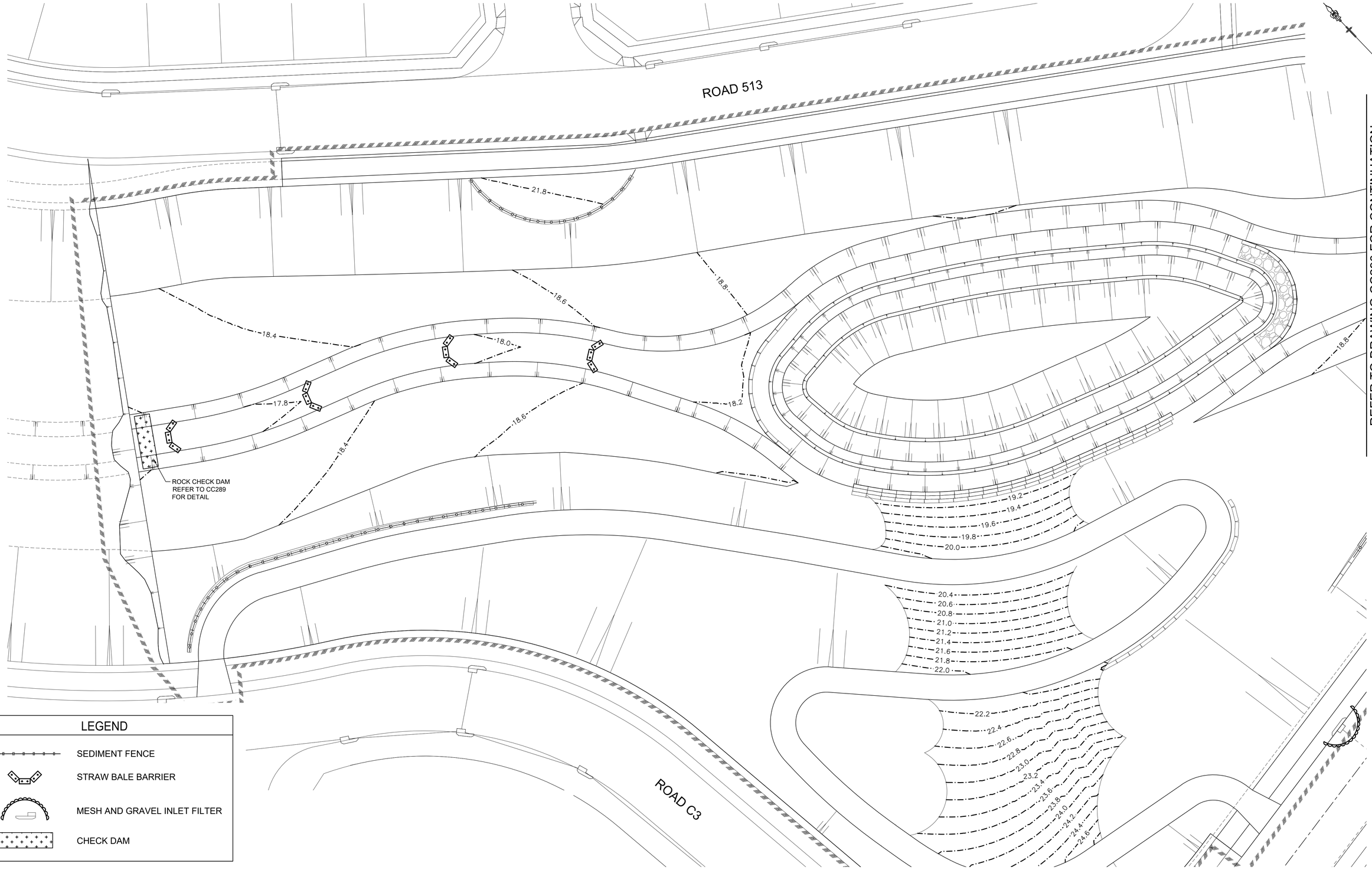
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
STORMWATER DETAILS

PLAN No: 11035005/CC287 B
FILE No: 11035005CC287
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:06:56 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC287.dwg



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METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
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J. WYNDHAM PRINCE
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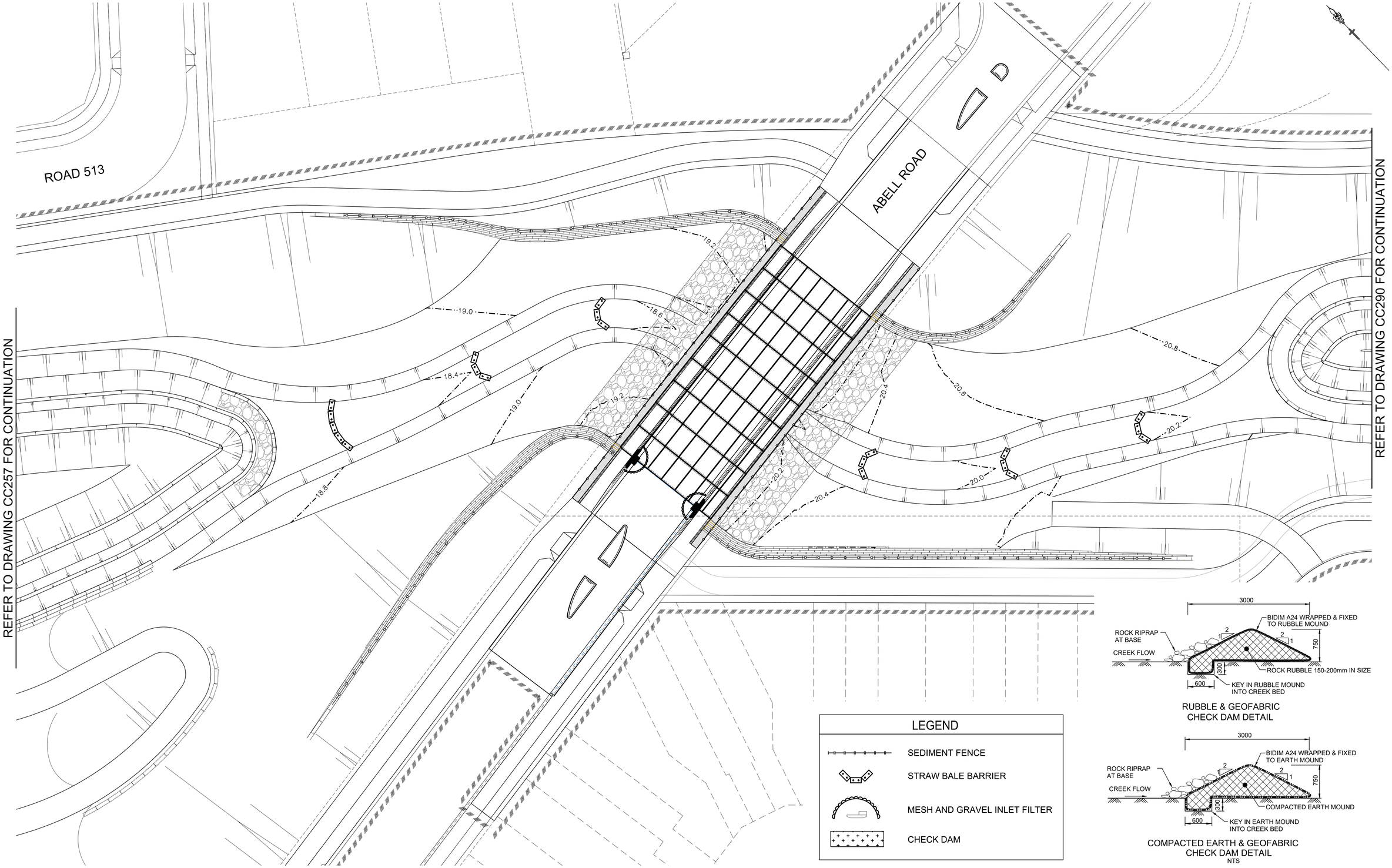
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SOIL & WATER MANAGEMENT PLAN
SHEET 1

PLAN No: 11035005/CC288 B
FILE No: 11035005CC288
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October, 2018 9:07:34 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC288.dwg



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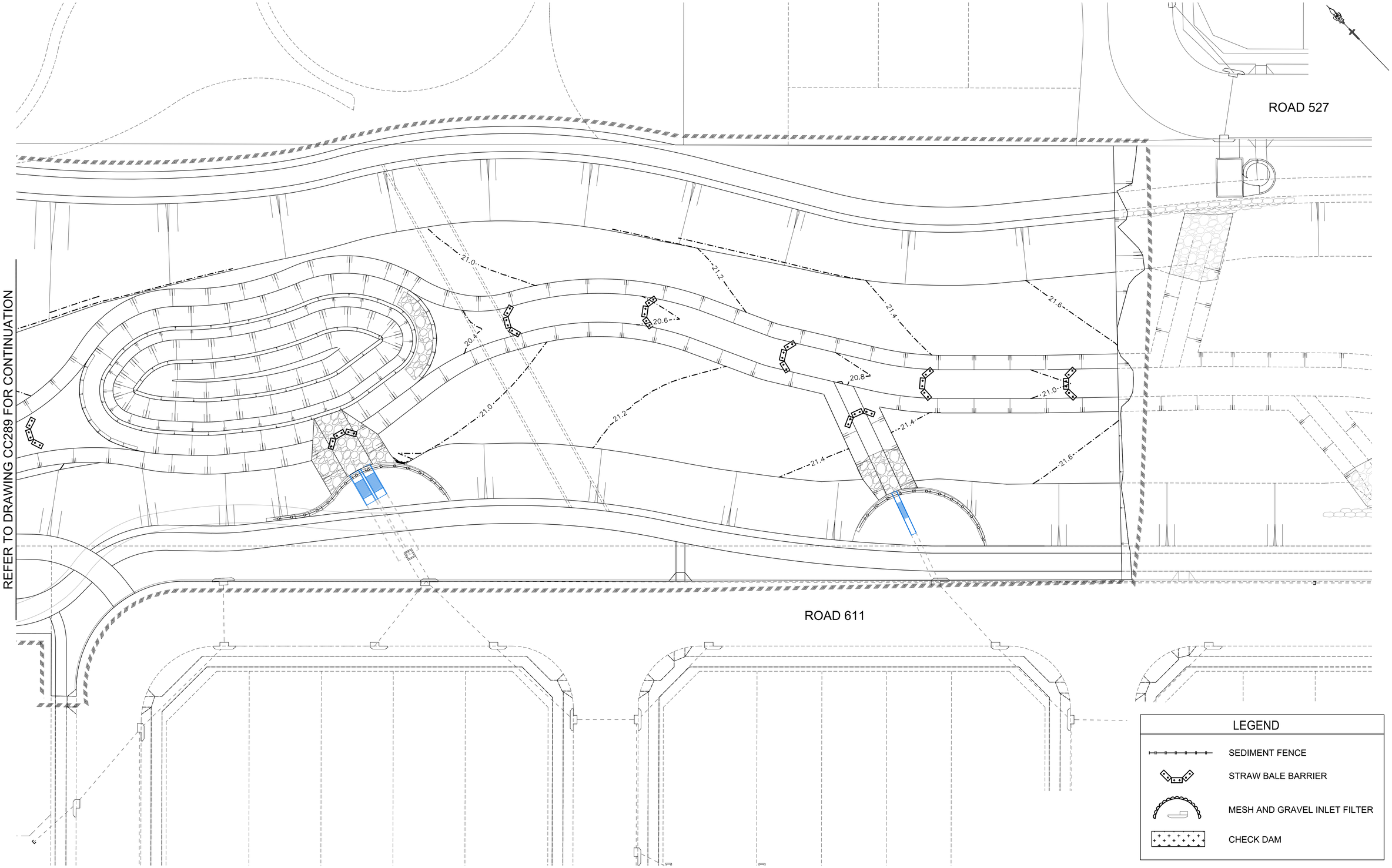
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SOIL & WATER MANAGEMENT PLAN
SHEET 2

PLAN No: 11035005/CC289 B
FILE No: 11035005CC289
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:08:07 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC289.dwg



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ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SOIL & WATER MANAGEMENT PLAN
SHEET 3

PLAN No: 11035005/CC290 B

FILE No: 11035005CC290

SHEET SIZE: A1 ORIGINAL

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DATUM:

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P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

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Plotted: 16 October , 2018 9:08:44 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC05_Culvert Abell Road\11035005CC290.dwg

SOIL AND WATER MANAGEMENT NOTES

GENERAL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE BLACKTOWN CITY COUNCIL.

2. BULK EARHWORKS ARE TO BE UNDERTAKEN IN STAGES. THE CONTRACTOR IS TO PREPARE A STAGING PLAN WHICH IS TO BE SUBMITTED TO THE PCA PRIOR TO THE COMMENCEMENT OF WORKS.

3. TOPSOIL FROM ALL AREAS TO BE DISTURBED SHALL BE STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN THOSE AREAS.

4. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILIZED AS EARLY AS POSSIBLE DURING DEVELOPMENT.

5. ALL TAIL-OUT DRAINS SHALL BE COUCH GRASSED AND TRAPEZOIDAL IN SECTION. STRAW BALES SHALL BE PLACED AS A SEDIMENT CONTROL DEVICE WHERE REQUIRED.

6. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING DEVELOPMENT CONFINING ACCESS WHERE POSSIBLE TO PROPOSED OR EXISTING ROAD ALIGNMENTS. AREAS TO BE LEFT UNDISTURBED SHALL BE MARKED OFF.

7. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.

8. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM 60% FULL OF SOLID MATERIALS, INCLUDING DURING THE MAINTENANCE PERIOD.

9. THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.

10. CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" ("THE BLUE BOOK").

11. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.

12. THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (PREF 2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES - WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDENTIFIED WITH BARRIER FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 10m	THE SITE MANAGER SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES. WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION.

NOTE:
WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED - ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE C-FACTORS BELOW 0.05 FROM 1st JANUARY TO 15th MAY USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

13. GENERALLY WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE AND WILL BE DETAILED IN THE CONSTRUCTION CERTIFICATE DRAWINGS. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:-

    a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE CC PLANS AND TO DETAIL(SD) 6-7.
    b. CONSTRUCT STABILISED SITE ACCESS AS SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-7.
    c. CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-3.
    d. PROVIDE TEMPORARY ACCESS TO THE SEDIMENT BASIN(S)AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6-7 OR BARRIER FENCING AND EARTH BANKS (SD) 5-2.
    e. PLACE SEDIMENT FENCING (SD) 6-7 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.
    f. CONSTRUCT SEDIMENT BASIN(S) GENERALLY IN ACCORDANCE WITH (SD) 6-4
    g. STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASIN(S) AS SOON AS FINAL LEVELS ARE ESTABLISHED
    h. CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE CC PLANS OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD) 4-1.
    i. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS.
    j. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
    k. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

14. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE

15. EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER THAN:-

    a. 2(h) - 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
    b. 2.5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
    c. 3(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
    d. 4(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
    e. 5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
    f. 6(h) - 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

    SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

16. PROTECTION FROM EROSIVE FORCES SHALL BE UNDERTAKEN ON ALL LANDS TO MEET THE REQUIREMENTS OF TABLE J3-3 "MAXIMUM ACCEPTABLE C-FACTORS AT NOMINATED TIMES DURING WORKS" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION"

17. TEMPORARY GROUND COVER IN SHEET FLOW AREAS IS TO BE IN ACCORDANCE WITH TABLE J3-4 "PLANT SPECIES FOR GROUND COVER" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" WHERE PRACTICAL FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATED AREAS

18. WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO BE SCHEDULED SO THAT THE TIME FROM STARTING LAND DISTURBANCE ACTIVITIES TO STABILISATION IS A DURATION OF LESS THAN 6 MONTHS - THIS MEANS ACHIEVING A C-FACTOR OF LESS THAN 0.1 AND SETTING IN MOTION A PROGRAM THAT ENSURES THAT IT DROPS PERMANENTLY, (BY VEGETATION, PAVING, ARMOURING etc.) TO LESS THAN 0.05 WITHIN A FURTHER 60 DAYS. LOCAL WATER RESTRICTIONS PERMITTING, LANDS THAT HAVE BEEN NEWLY PLANTED WITH GRASS SPECIES SHALL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER HAS BEEN ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER SHALL BE APPLIED AS NECESSARY IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE VEGETATIVE PROTECTION. NOTWITHSTANDING THIS SCHEDULE WORKS SO THAT THE DURATION FROM THE CONCLUSION OF LAND SHAPING TO THE COMPLETION OF FINAL STABILISATION IS LESS THAN 20 WORKING DAYS.

19. SEDIMENT FENCES (SD) 6-7 SHALL:-

    a. BE INSTALLED WHERE SHOWN ON THE CC PLANS AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
    b. HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m, AND A STORAGE DEPTH OF AT LEAST 0.6m.
    c. PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHMENT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 40litres/sec IN A MAX. 20yr Tc DISCHARGE.

20. STOCKPILES (SD) 4-1 SHALL BE LOCATED AS SHOWN ON THE CC PLANS AND AT THE DISCRETION OF THE SITE SUPERINTENDENT.

21. DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDANTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.

22. NOTWITHSTANDING NOTE 21 STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.

23. THE SEDIMENT RETENTION BASINS (SD) 6-4 SHALL:-

    a. BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
    b. BE FLOCCULATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
    c. HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.

24. STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:-

    a. LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
    b. THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
    c. THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT
    d. DISCHARGING SEDIMENT FROM THE SITE.

25. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR.

26. WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD) 6-8 & 6-9.

27. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED.

28. ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

STOCKPILE NOTES:

1. SPOIL AN TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREAS WHERE WATER MAY CONCENTRATE.

2. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 14 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.

3. FOLLOWING CONSTRUCTION, TOPSOIL SHALL BE RESPREAD TO A MINIMUM DEPTH OF 100mm ON THE BARE SOIL SURFACES AND REVEGETATE.

4. PLASTIC SHEETING MUST BE PLACED OVER THE STOCKPILE TO MINIMISE WIND BLOWN DUST.

SEDIMENTATION CONTROL DEVICES:

1. ALL STRAW BALES SHALL BE BOUND WITH WIRE. STRAW BALES SHALL BE PLACED END TO END IN A SINGLE ROW AND EMBEDDED INTO THE SOIL TO A DEPTH OF 100mm. EACH BALE SHALL BE SECURELY ANCHORED WITH TWO STEEL STAKES DRIVEN 450mm INTO THE GROUND AND LOCKED ON THE BALE CENTRELINE.

2. SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG IT'S LOWER EDGE.

3. PROVIDE STRIP OF TURF MIN. 300mm WIDE BEHIND KERB + 1m WIDE AROUND ALL SURFACE INLET PITS

SITE INSPECTION AND MAINTENANCE:

1. A SELF-AUDITING PROGRAM SHALL BE ESTABLISHED BASED ON A CHECK SHEET. A SITE INSPECTION USING THE CHECK SHEET SHALL BE MADE BY THE SITE MANAGER-:

    a. AT LEAST WEEKLY
    b. IMMEDIATELY BEFORE SITE CLOSURE
    c. IMMEDIATELY FOLLOWING RAINFALL EVENTS IN EXCESS OF 5mm IN ANY 24hr PERIOD.

    THE SELF AUDIT SHALL INCLUDE:-

    a. RECORDING THE CONDITION OF EVERY 'BEST MANAGEMENT PRACTICE' EMPLOYED
    b. RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH 'BEST MANAGEMENT PRACTICE'
    c. RECORDING THE VOLUMES OF SEDIMENT REMOVED FROM SEDIMENT RETENTION SYSTEMS WHERE APPLICABLE
    d. RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
    e. FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER FOR THEIR INFORMATION.

2. IN ADDITION A SUITABLY QUALIFIED PERSON SHALL BE RESPONSIBLE FOR OVERSEEING THE INSTALLATION AND MAINTENANCE OF ALL SOIL AND WATER MANAGEMENT WORKS ON THE SITE. THE PERSON SHALL BE REQUIRED TO SPEND A MINIMUM OF:-

    a. 2hrs ONSITE EACH FORTNIGHT UP UNTIL COMPLETION OF ROAD AND DRAINAGE WORKS AND/OR THE COMMISSIONING OF SEDIMENT BASIN(S)/WATER QUALITY CONTROL FACILITIES, AND DURING THE DECOMMISSIONING OF SAME AND/OR FINAL SITE STABILISATION. TO PROVIDE A SHORT MONTHLY WRITTEN REPORT.
    b. ONE HOUR ONSITE EACH 2 MONTHS DURING THAT PHASE WHERE THE DEVELOPERS RESPONSIBILITIES ARE LIMITED TO MAINTENANCE OF THE SDS DEVICES AND/OR SEDIMENT BASINS (ie DURING THE STAGE WHEN BUILDING WORKS CAN BE UNDERTAKEN) TO PROVIDE A SHORT WRITTEN REPORT EACH 4 MONTHS

    THE RESPONSIBLE PERSON SHALL ENSURE THAT:-

    a. THIS PLAN IS BEING IMPLEMENTED CORRECTLY
    b. REPAIRS ARE BEING UNDERTAKEN AS REQUIRED
    c. ESSENTIAL MODIFICATIONS TO THIS PLAN ARE BEING MADE IF AND WHEN NECESSARY EACH REPORT SHALL CERTIFY THAT WORKS HAVE BEEN CARRIED OUT ACCORDING TO THE APPROVED PLANS.

3. WASTE BINS SHALL BE EMPTIED AS NECESSARY, DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT

4. PROPER DRAINAGE OF THE SITE SHALL BE MAINTAINED. TO THIS END DRAINS (INCLUDING INLET AND OUTLET WORKS) SHALL BE CHECKED TO ENSURE THAT THEY ARE OPERATING AS INTENDED,ESPECIALLY THAT:-

    a. NO LOW POINTS EXIST WHICH CAN OVERTOP IN A LARGE STORM EVENT.
    b. AREAS OF EROSION ARE REPAIRED (e.g LINED WITH SUITABLE MATERIAL) AND/OR VELOCITY OF FLOW IS REDUCED APPROPRIATELY THROUGH CONSTRUCTION OF SMALL CHECK DAMS OR INSTALLING ADDITIONAL DIVERSIONS UPSLOPE
    c. BLOCKAGES ARE CLEARED (THESE MIGHT OCCUR BECAUSE OF SEDIMENT POLLUTION, SAND/SOIL/SPOIL BEING DEPOSITED IN OR TOO CLOSE TO THEM, BREACHED BY VEHICLE WHEELS etc)

5. SAND/SOIL/SPOIL MATERIALS PLACED CLOSER THAN 2m FROM HAZARD AREAS SHALL BE REMOVED SUCH HAZARD AREAS INCLUDE ANY AREAS OF HIGH VELOCITY WATER FLOWS (eg WATERWAYS AND GUTTERS) PAVED AREAS AND DRIVEWAYS.

6. RECENTLY STABILISED LANDS SHALL BE CHECKED TO ENSURE THAT THE EROSION HAZARD HAS BEEN EFFECTIVELY REDUCED. ANY REPAIRS SHALL BE INITIATED AS APPROPRIATE.

7. EXCESSIVE VEGETATIVE GROWTH SHALL BE CONTROLLED THROUGH MOWING OR SLASHING.

8. ALL SEDIMENT DETENTION SYSTEMS SHALL BE KEPT IN GOOD WORKING CONDITION. IN PARTICULAR ATTENTION SHALL BE GIVEN TO:-

    a. RECENT WORKS TO ENSURE THAT THEY HAVE NOT RESULTED IN DIVERSION OF SEDIMENT LADEN WATER AWAY FROM THEM.
    b. DEGRADABLE PRODUCTS TO ENSURE THAT THEY ARE REPLACED AS REQUIRED
    c. SEDIMENT REMOVAL TO ENSURE THE DESIGN CAPACITY OR LESS REMAINS IN THE SETTLING ZONE.

9. ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS SHALL BE CONSTRUCTED AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS (ie MAKE ONGOING CHANGES TO THIS PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS AT THE WORKS SITE OR ELSEWHERE IN THE CATCHMENT.

10. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN A FUNCTIONING CONDITION UNTIL ALL EARTHWORKS ACTIVITIES ARE COMPLETED AND THE SITE STABILISED.

11. WATERS IN SEDIMENT RETENTION BASIN(S) THAT OCCUPY MORE THAN 1/4 OF THE DESIGN CAPACITY DURING THAT STAGE OF THE WORKS UP UNTIL COMMISSIONING OF THE BASIN(s) SHALL BE:-

    a. TREATED WITH A FLOCCULATING AGENT (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.)
    b. DISCHARGED WITHIN 5 days FROM THE CONCLUSION OF ANY STORM EVENT LARGE ENOUGH TO FILL THE BASIN TO THAT LEVEL.

12. LITTER, DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM THE GROSS POLLUTANT TRAPS AND TRASH RACKS AS REQUIRED.

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ELARA SECTION 94 DETAILED CONCEPT PLANS BY J. WYNDHAM PRINCE 11035005/DC01 - 72 AND THE LANDSCAPE PLANS BY PATERSON DESIGN STUDIO.

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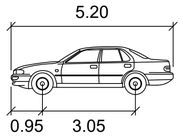

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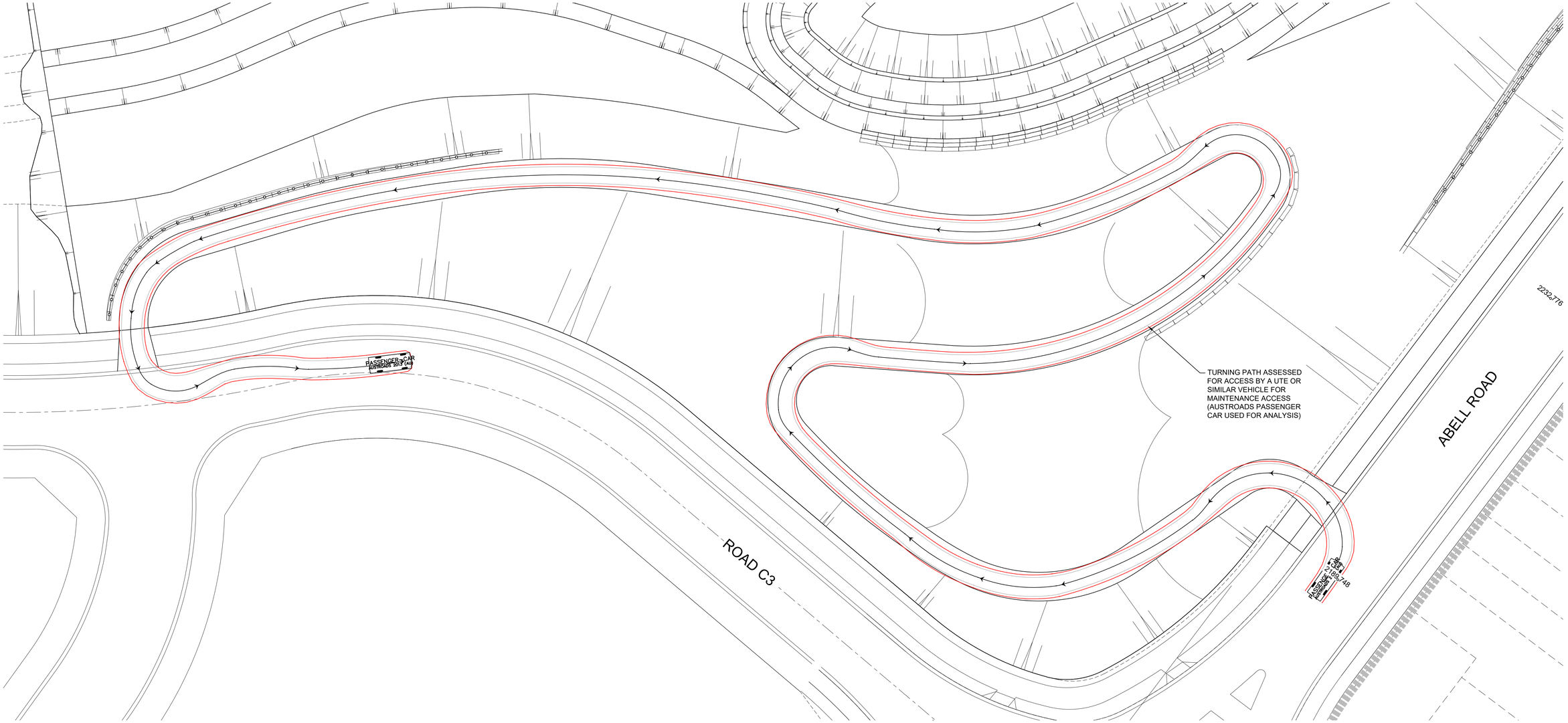

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METRES

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A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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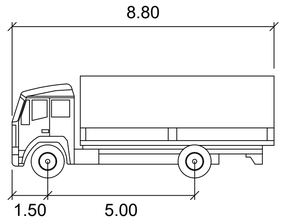
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
TURNING PATHS
SHEET 1

PLAN No: 11035005/CC292 B
FILE No: 11035005CC292
SHEET SIZE: A1 ORIGINAL

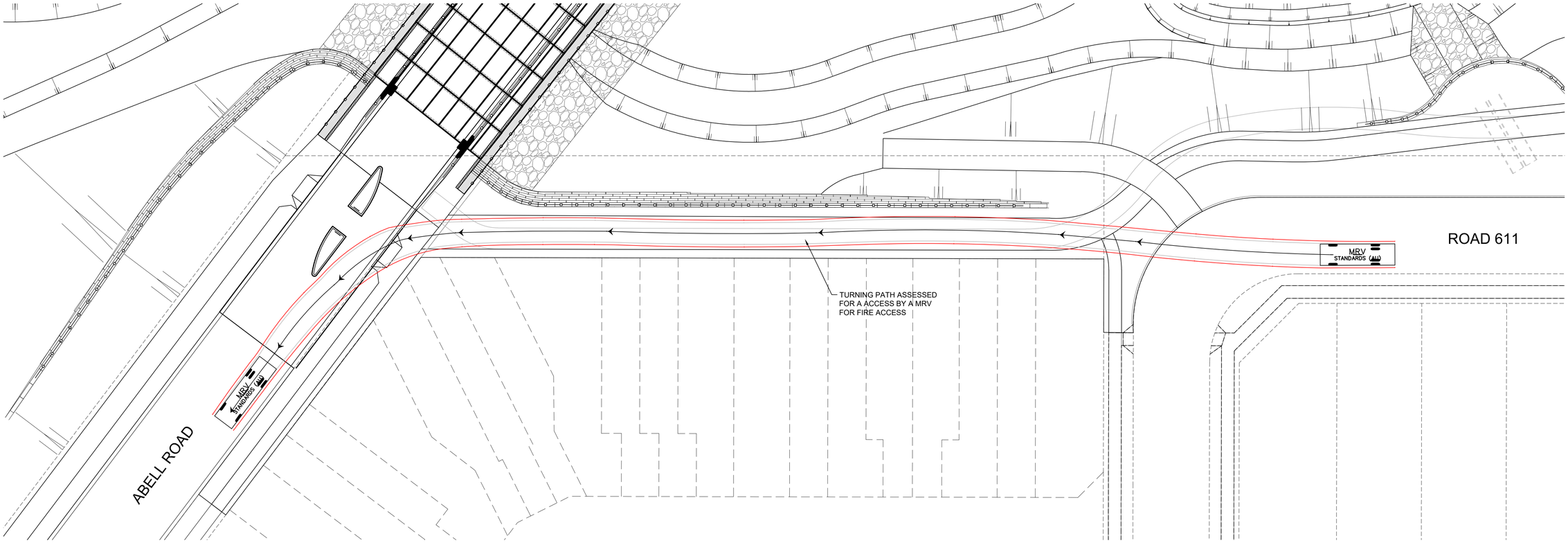
Plotted: 16 October , 2018 9:09:13 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC292.dwg



MEDIUM RIGID VEHICLE (MRV)

meters

Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	34.0



1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	NDW	AM	MS	16/08/18
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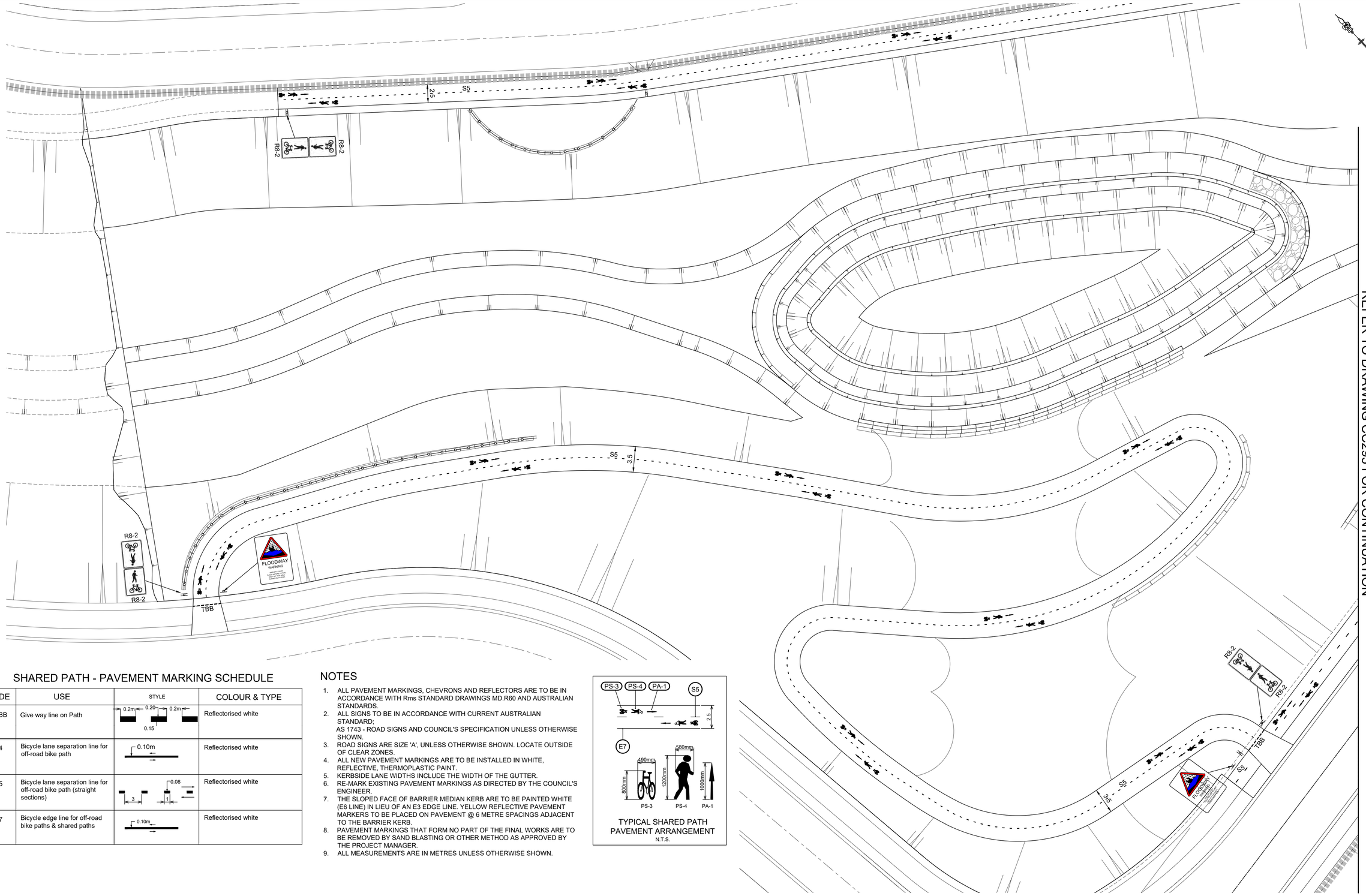
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
TURNING PATHS
SHEET 2

PLAN No: 11035005/CC293 B

FILE No: 11035005CC293

SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:09:33 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC293.dwg



SHARED PATH - PAVEMENT MARKING SCHEDULE

CODE	USE	STYLE	COLOUR & TYPE
TBB	Give way line on Path	0.2m 0.20 0.2m 0.15	Reflectorised white
S4	Bicycle lane separation line for off-road bike path	0.10m	Reflectorised white
S5	Bicycle lane separation line for off-road bike path (straight sections)	0.08 3 1	Reflectorised white
E7	Bicycle edge line for off-road bike paths & shared paths	0.10m	Reflectorised white

NOTES

1. ALL PAVEMENT MARKINGS, CHEVRONS AND REFLECTORS ARE TO BE IN ACCORDANCE WITH Rms STANDARD DRAWINGS MD.R60 AND AUSTRALIAN STANDARDS.
2. ALL SIGNS TO BE IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARD; AS 1743 - ROAD SIGNS AND COUNCIL'S SPECIFICATION UNLESS OTHERWISE SHOWN.
3. ROAD SIGNS ARE SIZE 'A', UNLESS OTHERWISE SHOWN. LOCATE OUTSIDE OF CLEAR ZONES.
4. ALL NEW PAVEMENT MARKINGS ARE TO BE INSTALLED IN WHITE, REFLECTIVE, THERMOPLASTIC PAINT.
5. KERBSIDE LANE WIDTHS INCLUDE THE WIDTH OF THE GUTTER.
6. RE-MARK EXISTING PAVEMENT MARKINGS AS DIRECTED BY THE COUNCIL'S ENGINEER.
7. THE SLOPED FACE OF BARRIER MEDIAN KERB ARE TO BE PAINTED WHITE (E6 LINE) IN LIEU OF AN E3 EDGE LINE. YELLOW REFLECTIVE PAVEMENT MARKERS TO BE PLACED ON PAVEMENT @ 6 METRE SPACINGS ADJACENT TO THE BARRIER KERB.
8. PAVEMENT MARKINGS THAT FORM NO PART OF THE FINAL WORKS ARE TO BE REMOVED BY SAND BLASTING OR OTHER METHOD AS APPROVED BY THE PROJECT MANAGER.
9. ALL MEASUREMENTS ARE IN METRES UNLESS OTHERWISE SHOWN.

TYPICAL SHARED PATH PAVEMENT ARRANGEMENT
N.T.S.

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	UF	AM	MS	20/09/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

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ISSUED FOR CONSTRUCTION APPROVAL

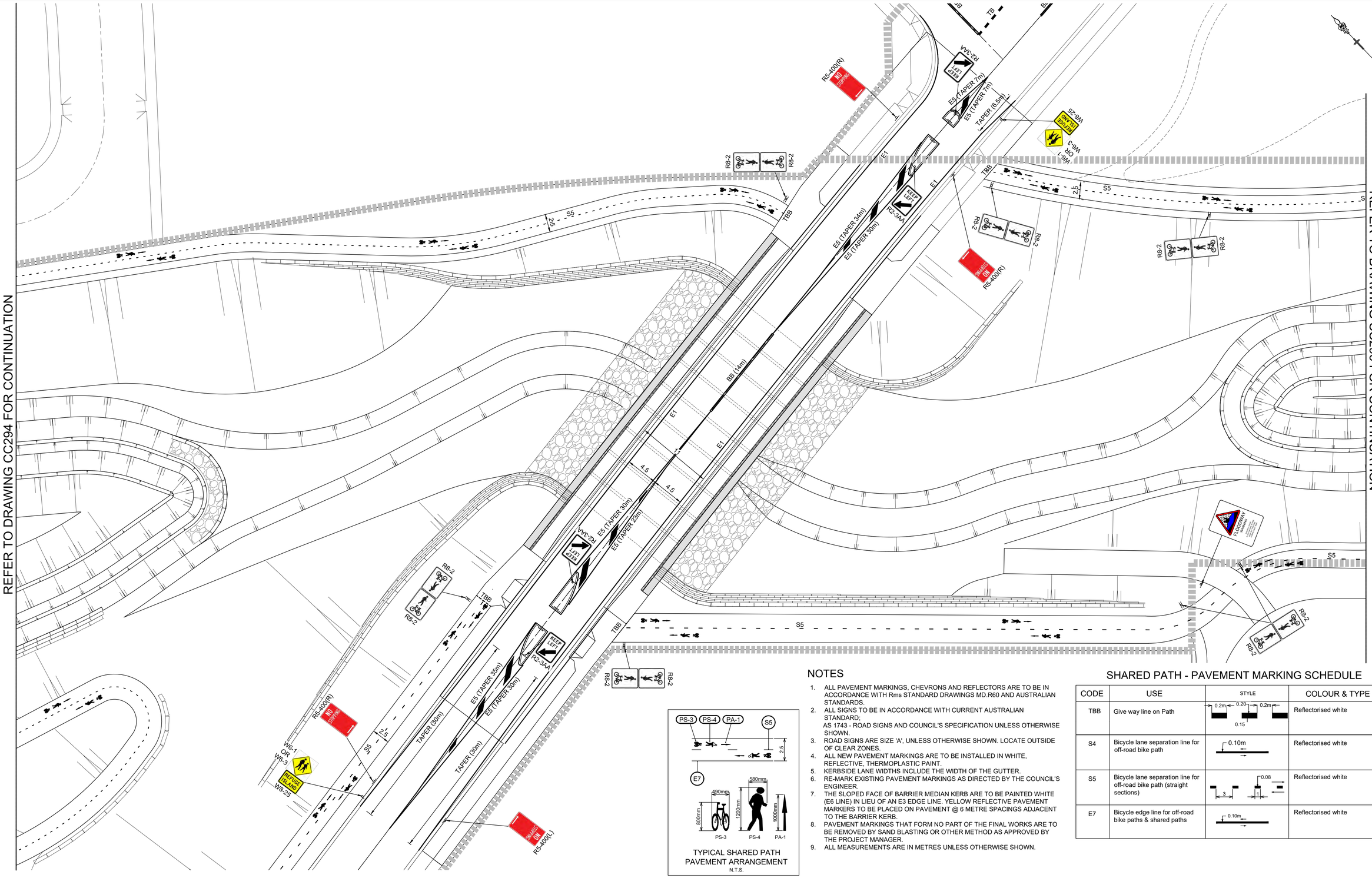
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SIGNAGE & LINEMARKING
SHEET 1

PLAN No: 11035005/CC294 B
FILE No: 11035005CC294
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:09:51 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC294.dwg

REFER TO DRAWING CC294 FOR CONTINUATION

REFER TO DRAWING CC296 FOR CONTINUATION



NOTES

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   AS 1743 - ROAD SIGNS AND COUNCIL'S SPECIFICATION UNLESS OTHERWISE SHOWN.
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8. PAVEMENT MARKINGS THAT FORM NO PART OF THE FINAL WORKS ARE TO BE REMOVED BY SAND BLASTING OR OTHER METHOD AS APPROVED BY THE PROJECT MANAGER.
9. ALL MEASUREMENTS ARE IN METRES UNLESS OTHERWISE SHOWN.

SHARED PATH - PAVEMENT MARKING SCHEDULE

CODE	USE	STYLE	COLOUR & TYPE
TBB	Give way line on Path	0.2m, 0.20, 0.2m, 0.15	Reflectorised white
S4	Bicycle lane separation line for off-road bike path	0.10m	Reflectorised white
S5	Bicycle lane separation line for off-road bike path (straight sections)	0.08, 3, 1	Reflectorised white
E7	Bicycle edge line for off-road bike paths & shared paths	0.10m	Reflectorised white

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	UF	AM	MS	20/09/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
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CLIENT: Stockland

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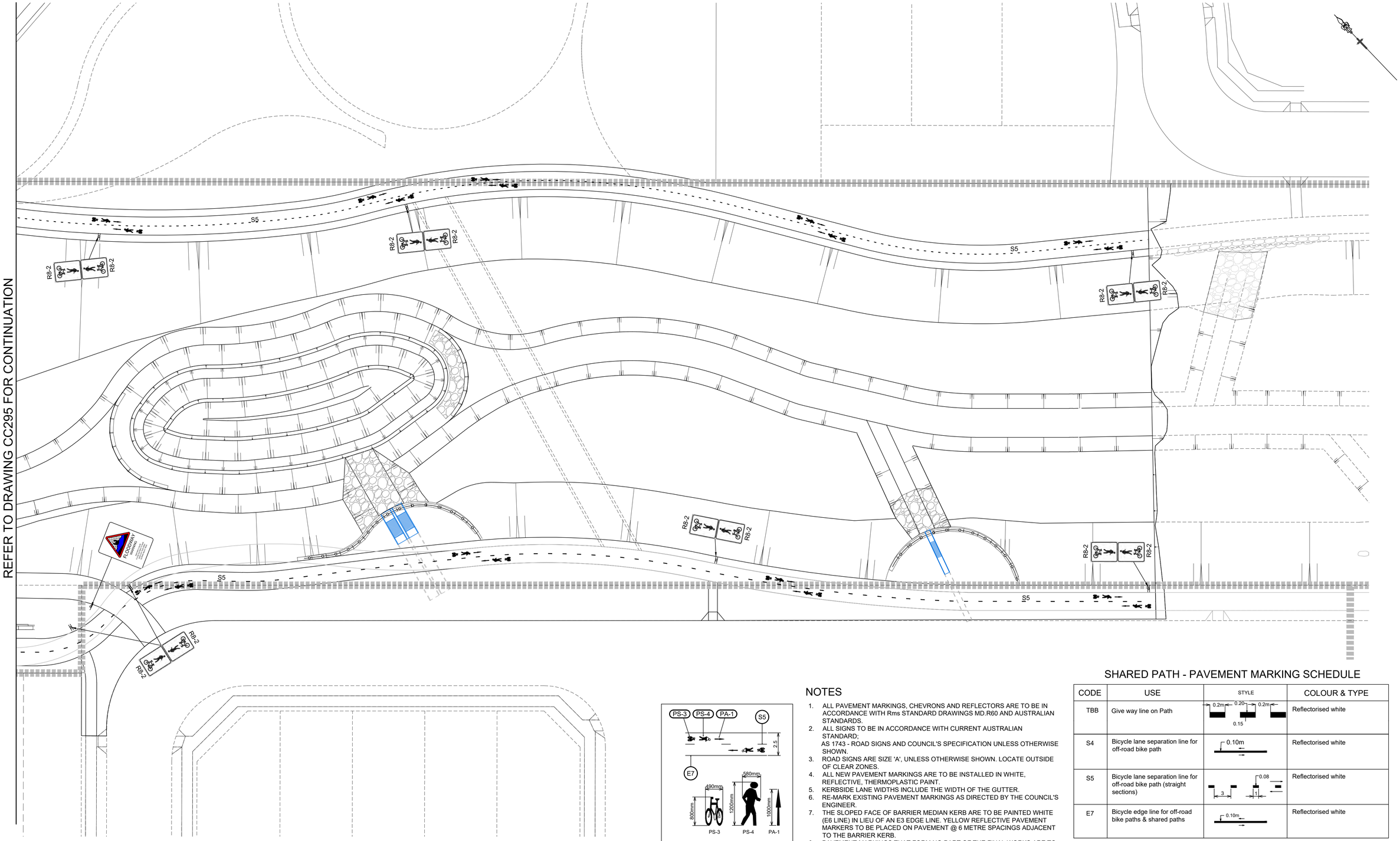
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SIGNAGE & LINEMARKING
SHEET 2

PLAN No: 11035005/CC295 B
FILE No: 11035005CC295
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:10:07 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC295.dwg

REFER TO DRAWING CC295 FOR CONTINUATION



NOTES

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TYPICAL SHARED PATH PAVEMENT ARRANGEMENT
N.T.S.

SHARED PATH - PAVEMENT MARKING SCHEDULE

CODE	USE	STYLE	COLOUR & TYPE
TBB	Give way line on Path	0.2m 0.20 0.2m 0.15	Reflectorised white
S4	Bicycle lane separation line for off-road bike path	0.10m	Reflectorised white
S5	Bicycle lane separation line for off-road bike path (straight sections)	0.08 3 1	Reflectorised white
E7	Bicycle edge line for off-road bike paths & shared paths	0.10m	Reflectorised white

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	UF	AM	MS	20/09/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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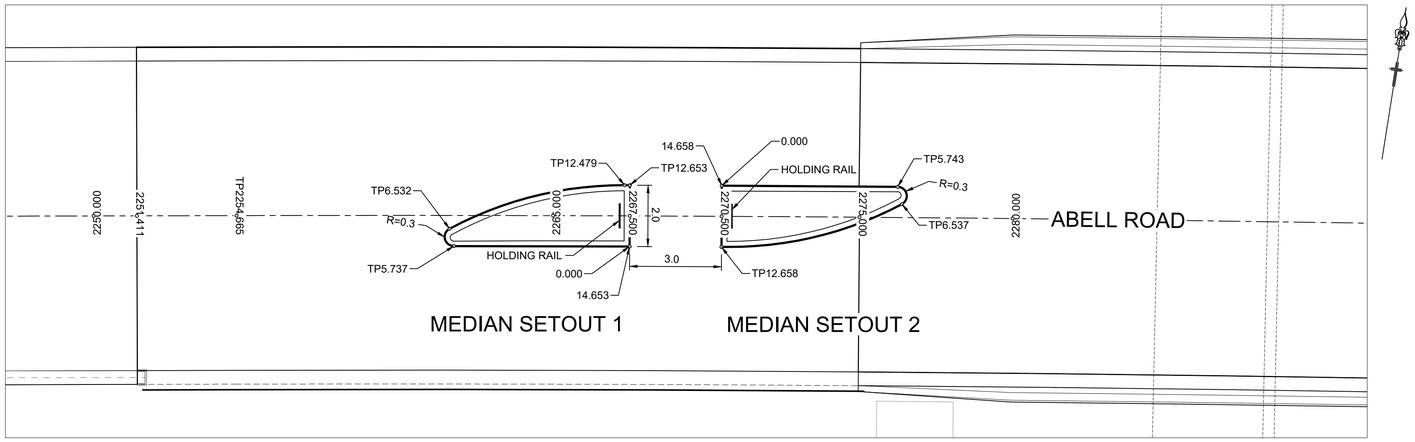
ELARA S94 WORKS
ABELL ROAD CULVERT CROSSING
SIGNAGE & LINEMARKING
SHEET 3

PLAN No: 11035005/CC296 B
FILE No: 11035005CC296
SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:10:25 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\05_Culvert Abell Road\11035005CC296.dwg

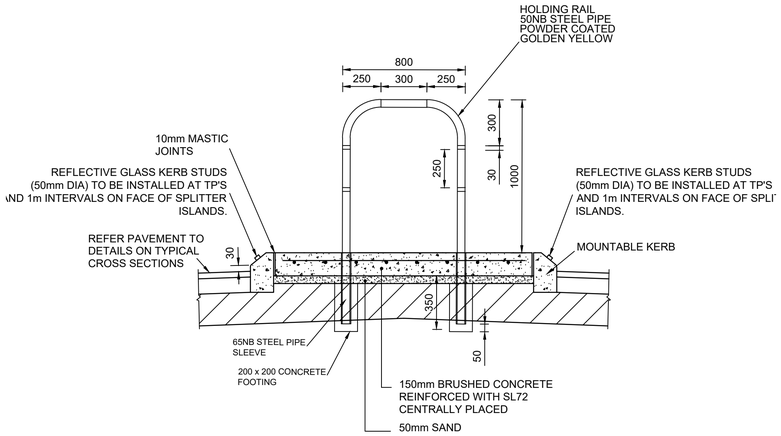


PLAN

SCALE 1:100

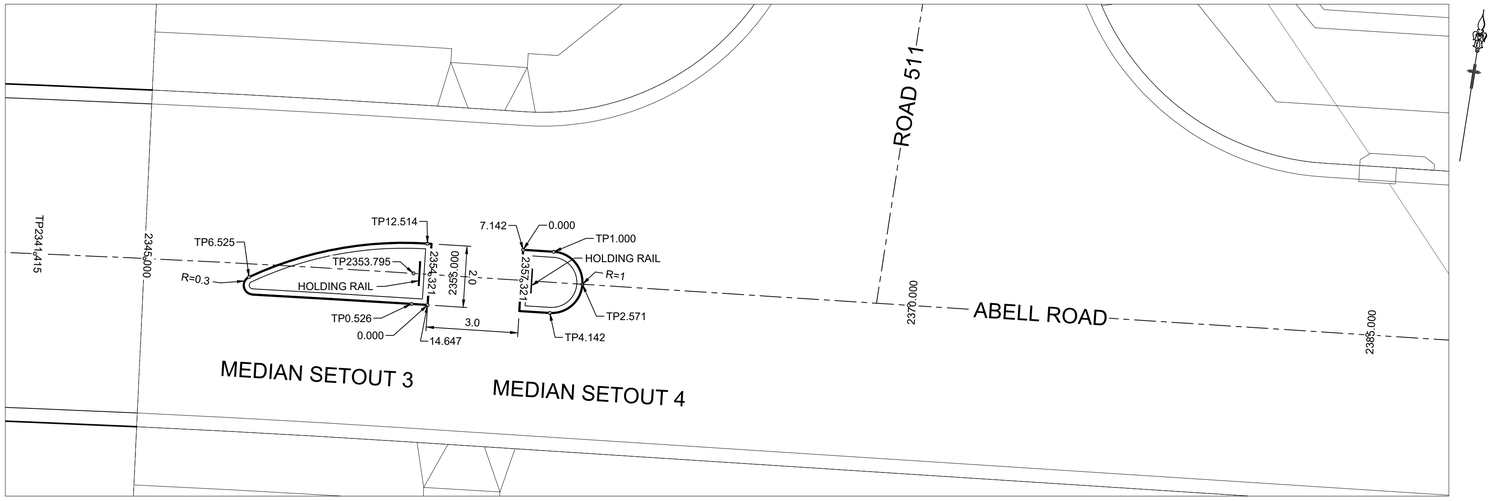
MEDIAN SETOUT 1					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296950.35	6268797.35			
2.87	296947.51	6268796.91		-1999.4	5.74
5.74	296944.68	6268796.46	261°01'14.75"		
5.94	296944.45	6268796.42		0.3	0.4
6.13	296944.36	6268796.64	336°54'08.59"		
6.33	296944.26	6268796.85		0.3	0.4
6.53	296944.45	6268797	52°47'02.42"		
9.51	296946.87	6268798.83		12	5.95
12.48	296949.87	6268799.3	81°10'48.68"		
12.57	296949.96	6268799.31		2001.4	0.17
12.65	296950.04	6268799.32			

MEDIAN SETOUT 2					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296953.01	6268799.78			
2.87	296955.85	6268800.22		2001.4	5.74
5.74	296958.69	6268800.65	81°26'07.85"		
5.94	296958.92	6268800.68		0.3	0.4
6.14	296959.01	6268800.46	157°14'15.56"		
6.34	296959.1	6268800.25		0.3	0.4
6.54	296958.91	6268800.11	233°02'23.27"		
9.49	296956.5	6268798.29		12	5.91
12.45	296953.52	6268797.84	261°16'37.27"		
12.55	296953.41	6268797.82		-1999.4	0.21
12.66	296953.31	6268797.81			



MEDIAN ISLAND DETAIL

SCALE 1:20

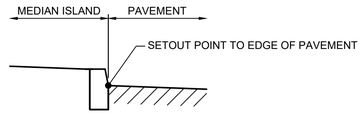


PLAN

SCALE 1:100

MEDIAN SETOUT 3					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297036.36	6268808.67			
0.53	297035.83	6268808.62	264°38'59.42"		
3.13	297033.24	6268808.38		-499	5.2
5.73	297030.65	6268808.11	264°03'08.62"		
5.93	297030.42	6268808.09		0.3	0.4
6.13	297030.34	6268808.31	340°03'12.40"		
6.33	297030.26	6268808.53		0.3	0.4
6.53	297030.46	6268808.66	56°03'16.18"		
9.52	297032.99	6268810.37		12	5.99
12.51	297036.04	6268810.65	84°38'59.42"		
12.65	297036.17	6268810.66			

MEDIAN SETOUT 4					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297039.16	6268810.94			
1	297040.15	6268811.04	84°39'00.24"		
1.79	297041.15	6268811.13		1	1.57
2.57	297041.24	6268810.13	174°39'01.06"		
3.36	297041.33	6268809.14		1	1.57
4.14	297040.34	6268809.04	264°39'00.24"		
5.14	297039.34	6268808.95			



MEDIAN ISLAND SETOUT DETAIL

REFER TO COUNCIL DRAWING A(BS)101M

N.T.S.

* PROVIDE 0.15m ROUNDING AT CORNER OF REFUGE ISLAND

ALL ASSOCIATED WORK ARE TO BE READ IN CONJUNCTION WITH THE TECHNICAL DIRECTION - PEDESTRIAN REFUGES (TDT2011/01a)

1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES

1:100 (AT A1) 1:200 (AT A3) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

B	ISSUED FOR CONSTRUCTION APPROVAL	PAS	NDW	AM	MS	16/10/18
A	ISSUED FOR TENDER	PAS	UF	AM	MS	20/09/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S94 WORKS

ABELL ROAD CULVERT CROSSING

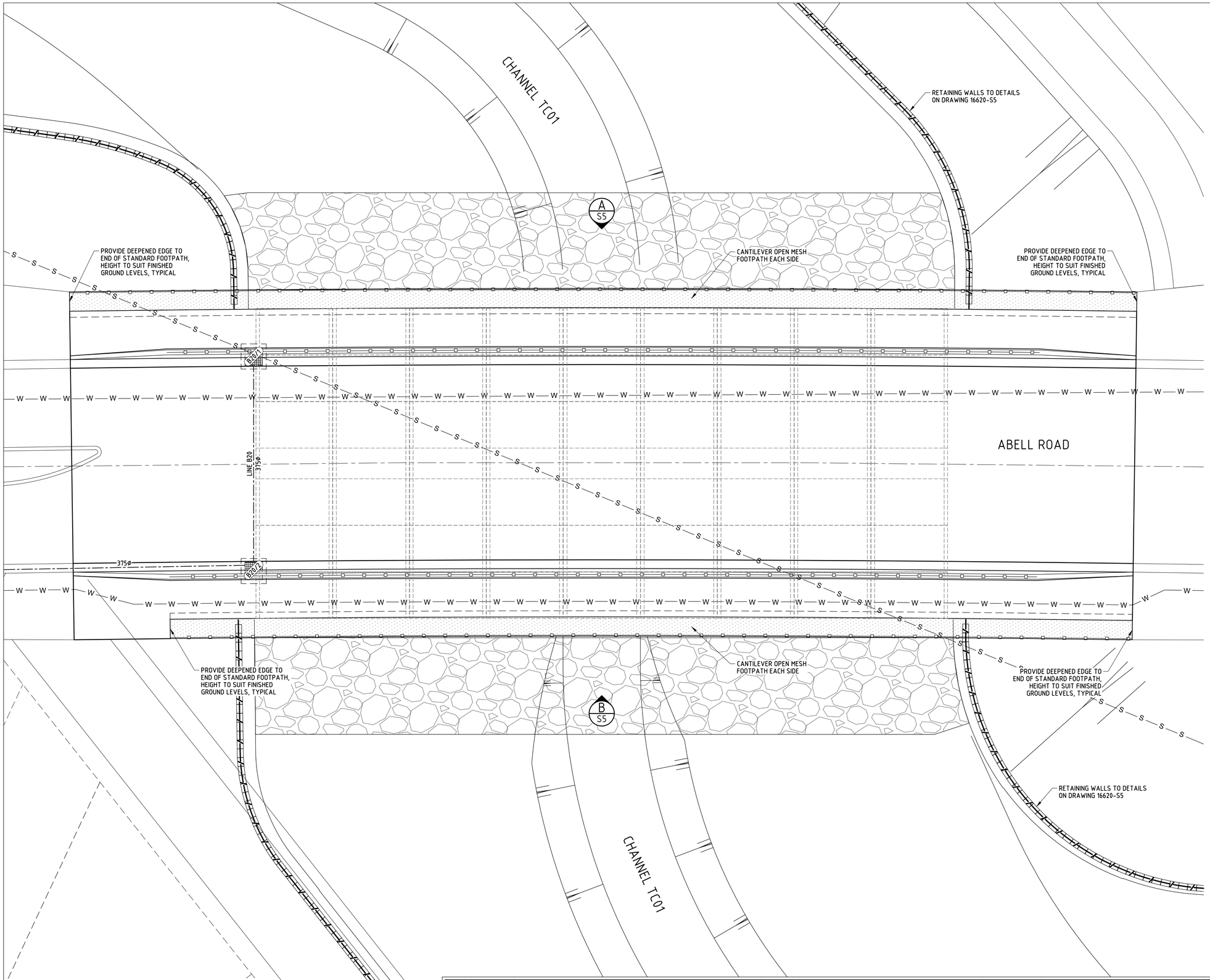
PEDESTRIAN ISLAND SETOUT PLAN

PLAN No: 11035005/CC297 B

FILE No: 11035005CC297

SHEET SIZE: A1 ORIGINAL

Plotted: 16 October , 2018 9:10:59 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC05_Culvert Abell Road\11035005CC297.dwg



Drainage Structures Notes

General

1. These drawings are to be read in conjunction with all the contract drawings and specifications. Refer any discrepancies to engineer before proceeding.
2. Do not obtain dimensions by scaling structural drawings. All dimensions are in millimetres. All set-out dimensions to be verified by the builder.
3. All workmanship and materials to comply with the requirements of current Australian Standards codes, the Building Code of Australia, the ordinances of relevant building authorities and with manufacturers specifications.
4. The builder is to provide temporary bracing and shoring as necessary to ensure the structure and the excavations are maintained in a stable condition during construction.
5. The structure has been designed in accordance with AS5100 bridge design code for the following applied loads:

   Roadways M1600 moving traffic load and W80 wheel and A160 axle load as applicable
   Pedestrian and Cycle Paths **5kPa with 20kN point load**

6. Footings and base slabs have been designed for an allowable bearing capacity of 150kPa on firm natural ground

Concrete

1. Concrete quality

Element	Concrete Strength f'c	Max. Agg. Size	Maximum Slump	Cement Type
Piers	32MPa	20mm	100mm	GB
Blinding Slabs	5MPa	20mm	100mm	GB
Slabs	40MPa	20mm	100mm	GB
Walls	40MPa	20mm	100mm	GB

2. No admixtures shall be used in concrete unless approved in writing by the engineer.
3. Clear concrete cover to reinforcement shall be 40mm to all surfaces unless noted otherwise.
4. Construction joints indicated shall be located and formed to the approval of the engineer.
5. No penetrations, recesses or chases other than those indicated on the structural drawings shall be made in concrete members unless approved in writing by the engineer.
6. Unless shown otherwise all external and re-entrant corners shall be chamfered 25mm.
7. Slabs to be cured and kept moist for 7 days minimum.
8. No concrete to be poured when site temperature exceeds 35 degrees celsius or falls below 5 degrees celsius

Reinforcement

1. Reinforcement steel quality

Reinforcement Type	Grade	SAA Code	Symbol
Welding Grade Deformed	500	AS4671	N
Plain Round	230	AS1302	R
Fabric	500	AS4671	SL, RL, L

2. Reinforcement is represented diagrammatically. It is not necessarily shown in true position.
3. All reinforcement shall be securely tied and positioned accurately by means of steel or plastic chairs or other approved accessories. Masonry blocks will not be permitted.
4. Provide the engineer with 24 hours notice of reinforcement being ready for inspection. No concrete is to be poured without approval of the engineer.
5. Splices in reinforcement shall be made only in the position indicated. The approval of the engineer shall be obtained for any other splice.
6. Welding of reinforcement will not be permitted unless indicated on the structural drawing or with written approval of the engineer.
7. Minimum lap of reinforcement shall be as shown in table 13.1.2.2.(A) of AS3600 unless shown otherwise. Laps for mesh shall be 1.5 times the nominal wire spacing of approved equivalent.
8. Reinforcement must not be continuous through contraction joints.
9. Minimum radius for bends in reinforcement to be 4 bar diameters (DB) unless noted otherwise.

REFER TO CIVIL DESIGN DRAWINGS FOR SET OUT DETAILS, ELEVATIONS AND LEVELS

DRAWING LIST

S1 - CULVERT GENERAL ARRANGEMENT PLAN
S2 - CULVERT PIERING PLAN & SEWER SECTIONS
S3 - CULVERT SLAB PLANS & REINFORCEMENT SCHEDULES
S4 - CULVERT SLAB DETAILS & SECTIONS
S5 - CULVERT LAYOUT PLAN & ELEVATIONS
S6 - WING WALL DETAILS
S7 - PAVEMENT, BOARDWALK & BARRIER LAYOUT PLANS
S8 - SPECIAL PIT & PAVEMENT JOINT DETAILS
S9 - PAVEMENT & BOARDWALK DETAILS & SECTIONS
S10 - CANTILEVERED FOOTPATH DETAILS
S11 - BARRIER DETAILS
S12 - SANDSTONE RETAINING WALL DETAILS

REV.	DATE	DETAILS	ENG	DFT.
A	24/08/2018	FOR TENDER ISSUE	RD	JM

REVISIONS

USE OF THESE DRAWINGS
THE DESIGN AND DETAILS SHOWN ON THESE DRAWINGS ARE APPLICABLE TO THIS PROJECT ONLY AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART OR BE USED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT THE WRITTEN PERMISSION OF INHOUSE CONSULTING ENGINEERS WITH WHOM COPYRIGHT RESIDES

INHOUSE CONSULTING ENGINEERS PTY. LTD.
CONSULTING STRUCTURAL & CIVIL ENGINEERS
P.O. BOX 752, KINGSWOOD, NSW 2747
Telephone : (02) 4721 0044
Website: www.inhouseengineers.com.au
Email: info@inhouseengineers.com.au
A.B.N. 44 066 587 719

DESIGNED R DOHNT
DRAWN M MILLICAN
SCALE 1:100 (A1)
DATE AUG' 2018

CLIENT J. WYNDHAM PRINCE

Mr Roger E. Dohnt
DipTechEng, B.E. MIEAust, CPEng
ENGINEERS AUSTRALIA
Signature ..... Date 24/08/18
Registered on the National Engineering Register in the following area/s of practice
Civil / Structural - N.E.R. No. 61807

PROJECT
PROPOSED CULVERT
AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING
FOR J WYNDHAM PRINCE

DRG TITLE
CULVERT GENERAL ARRANGEMENT PLAN

JOB No. 16625
DRG No. S1
REV. -

CULVERT PIERING PLAN

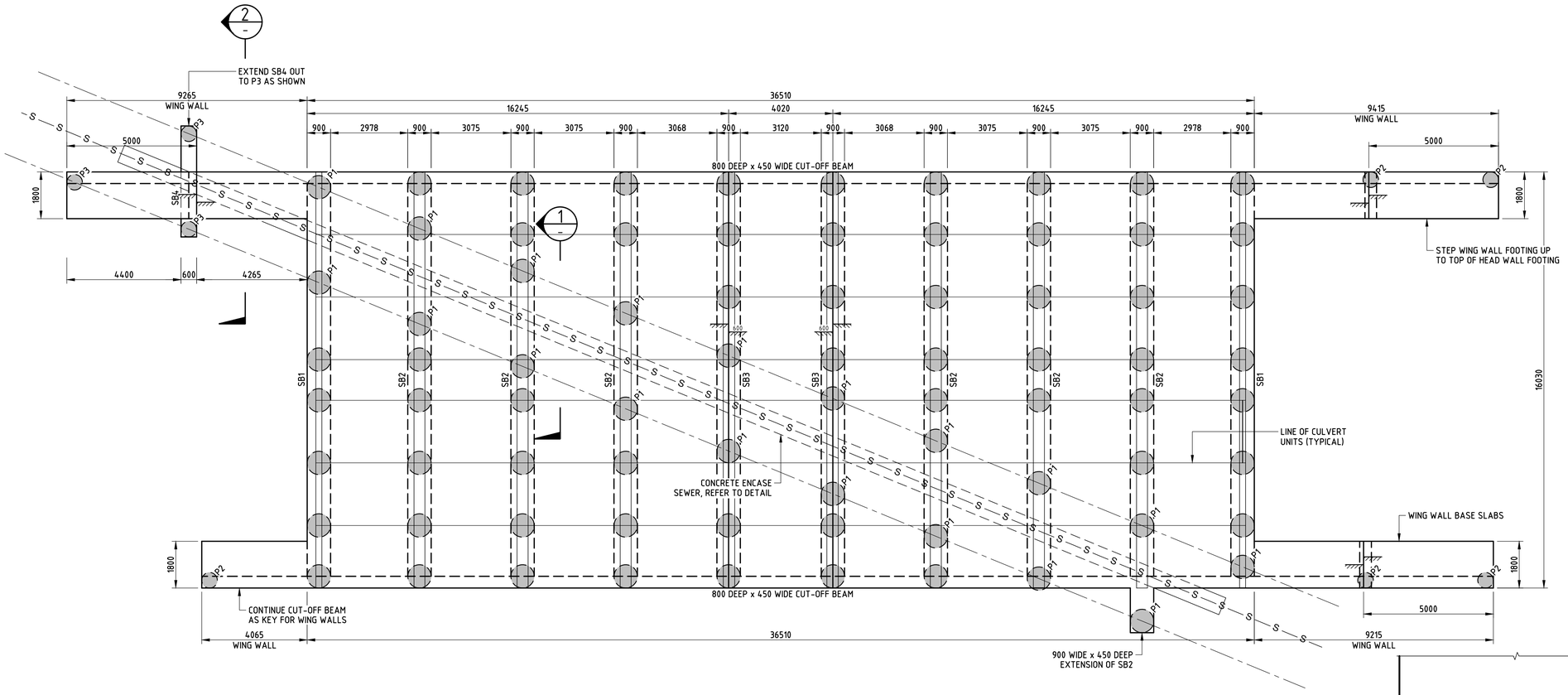
SCALE: 1:100

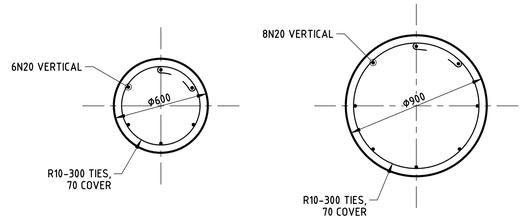
ALL PIERS UNLESS NOTED OTHERWISE TO BE 900Φ TAKEN AT LEAST 1.3m INTO SHALE AND BEARING ON CLASS IV SHALE WITH SAFE BEARING CAPACITY OF 700kPa. PROVISIONAL DEPTH BELOW SLAB BEAMS OF 2.5m

PIERS MARKED P1 ARE TO BE 900Φ TAKEN TO INVERT OF SEWER AT RL16.8 AND BEARING ON CLASS IV SHALE WITH A SAFE BEARING CAPACITY OF 700kPa.

PIERS MARKED P2 ARE TO BE 600Φ TAKEN AT LEAST 1.3m INTO SHALE AND BEARING ON CLASS IV SHALE WITH SAFE BEARING CAPACITY OF 700kPa. PROVISIONAL DEPTH BELOW SLAB BEAMS OF 2.5m

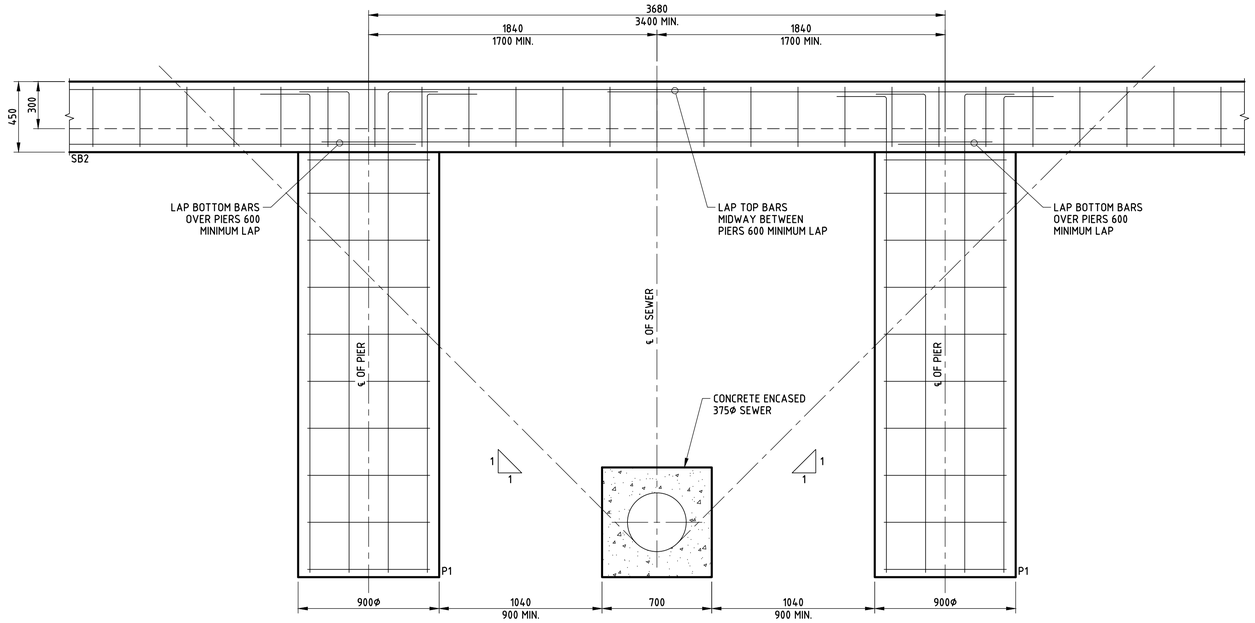
PIERS MARKED P3 ARE TO BE 600Φ TAKEN TO INVERT OF SEWER AT RL16.8 AND BEARING ON CLASS IV SHALE WITH A SAFE BEARING CAPACITY OF 700kPa



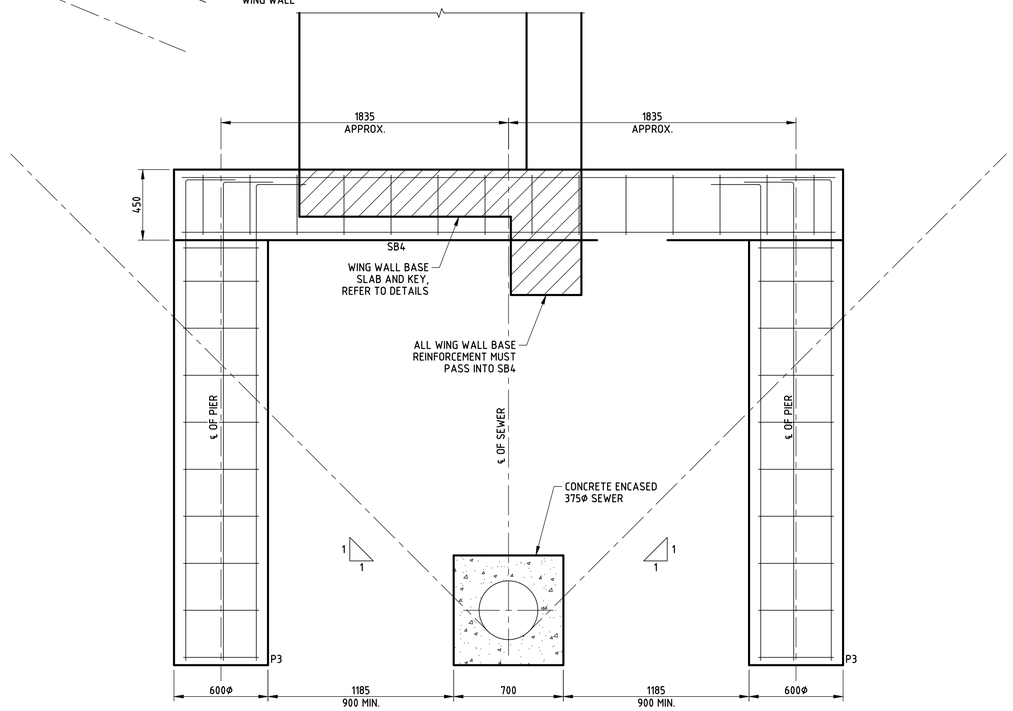


600Φ PIERS
SCALE: 1:20

900Φ PIERS
SCALE: 1:20



SECTION 1
SCALE 1:20



SECTION 2
SCALE 1:20

REV.	DATE	DETAILS	ENG	DFT.
A	24/08/2018	FOR TENDER ISSUE	RD	JM

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A.B.N. 44 066 587 719

DESIGNED: R DOHNT
DRAWN: M MILLICAN
SCALE: 1:100, 20 (A1)
DATE: AUG' 2018

CLIENT: J. WYNDHAM PRINCE

Mr Roger E. Dohnt
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ENGINEERS AUSTRALIA
Signature ..... Date 24 / 08 / 18
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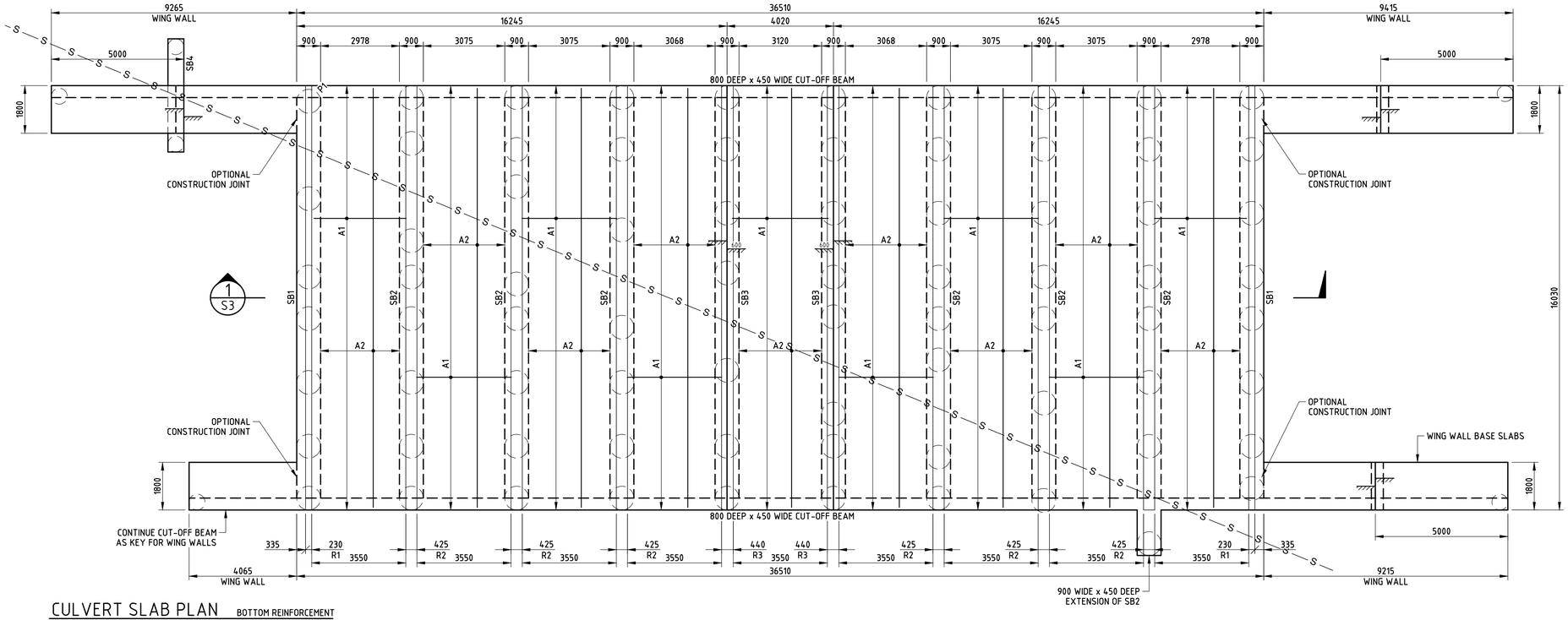
PROJECT: PROPOSED CULVERT AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING FOR J WYNDHAM PRINCE

DRG TITLE: CULVERT PIERING PLAN & SEWER SECTIONS

JOB No. 16625

DRG No. S2

REV. -

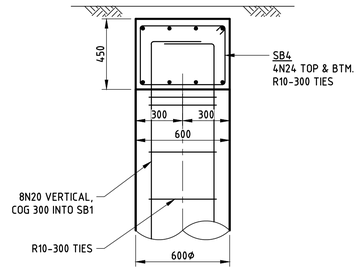


CULVERT SLAB PLAN BOTTOM REINFORCEMENT

SCALE: 1:100

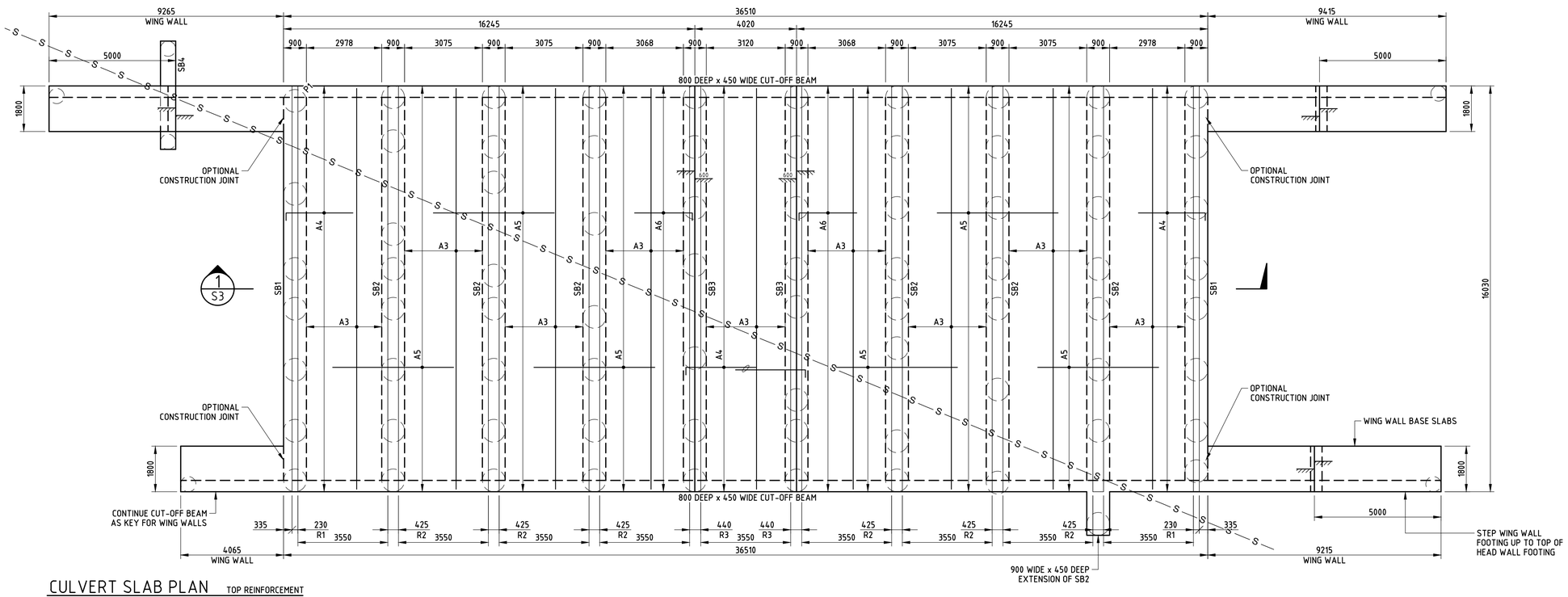
CULVERT REINFORCEMENT SCHEDULE		
TAG	BAR & SPACING	SHAPE
A1	N20-150	3600
A2	N16-200	VARIES / 600 LAP
A3	N16-200	VARIES / 600 LAP
A4	N24-150	2800 / 800 LAP AT MIDSPAN / 300
A5	N24-150	4800 / 800 LAP AT MIDSPAN
A6	N24-150	2500 / 800 LAP AT MIDSPAN / 300
B1	N24-150	800 / 600 / 300
B2	N24-150	600 / 900 / 300
B3	N16-300	1000 / 700 / 600 / 370

REFER TO WING WALL DETAIL
FOR REINFORCEMENT DETAILS



DETAIL - SB4 BEYOND WING WALL

SCALE: 1:20



CULVERT SLAB PLAN TOP REINFORCEMENT

SCALE: 1:100

NOTES:

- CULVERT BASE SLAB DIMENSIONS ARE FOR STANDARD PRECAST CULVERT CROWN UNITS BY ROCLA.
- IF ALTERNATIVE SUPPLIER IS SELECTED, THE BUILDER MUST CHECK AND ADJUST DIMENSIONS TO SUIT

REV.	DATE	DETAILS	ENG	DFT.
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DRAWN: M MILLICAN
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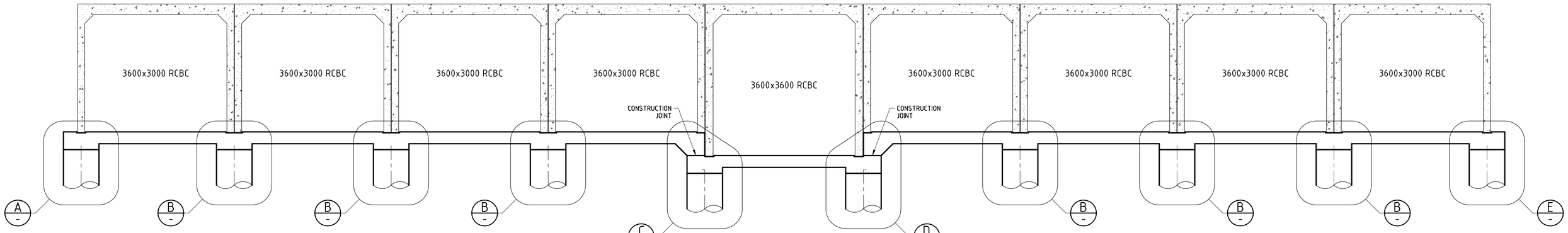
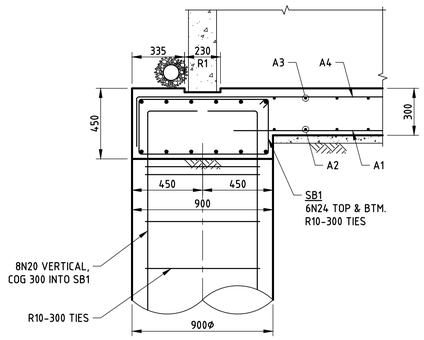
PROJECT: PROPOSED CULVERT AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING FOR J WYNDHAM PRINCE

DRG TITLE: CULVERT SLAB PLANS & REINFORCEMENT SCHEDULES

JOB No. 16625
DRG No. S3
REV. -

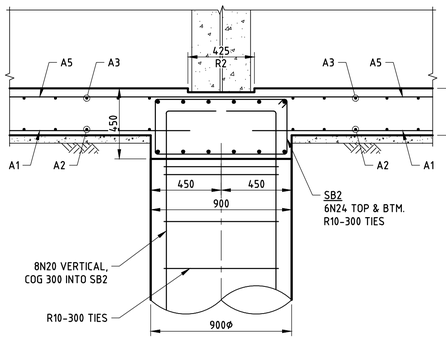


SECTION 1/S2
SCALE 1:50



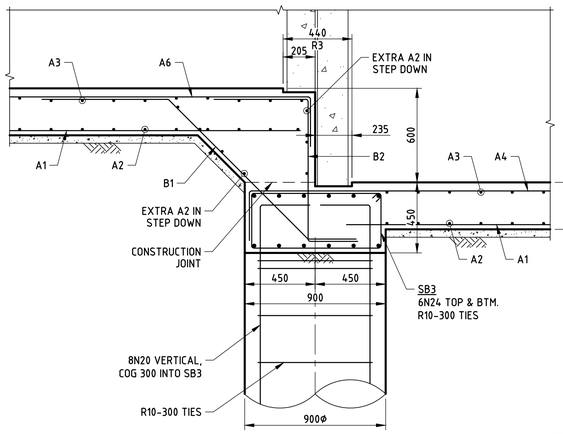
DETAIL A
SCALE 1:20

SLAB BEAM - SB1



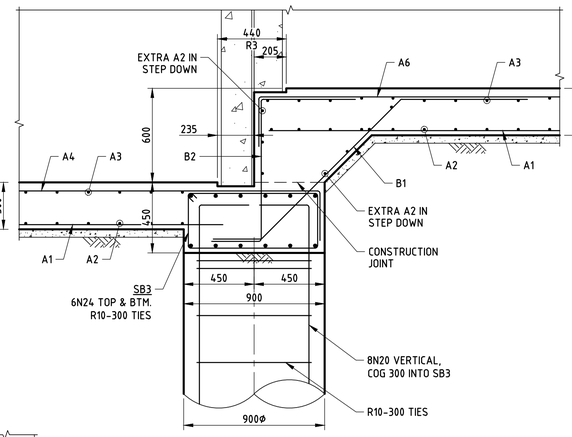
DETAIL B
SCALE 1:20

SLAB BEAM - SB2



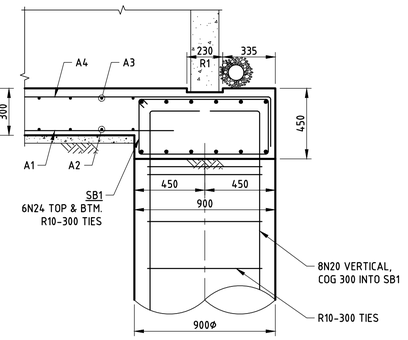
DETAIL C
SCALE 1:20

SLAB BEAM - SB3



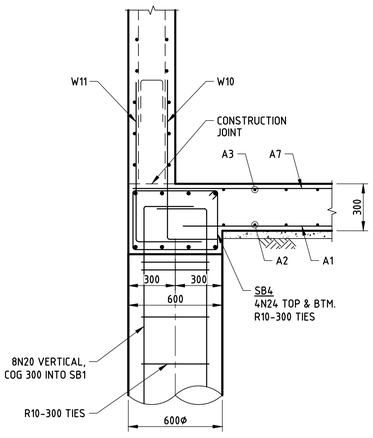
DETAIL D
SCALE 1:20

SLAB BEAM - SB3

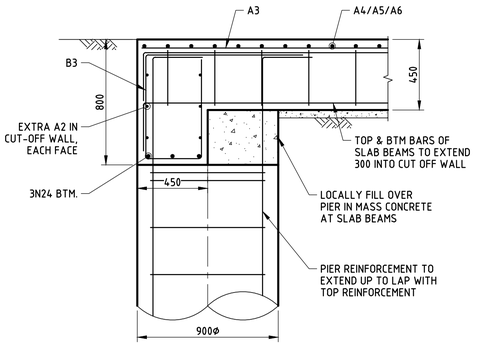


DETAIL E
SCALE 1:20

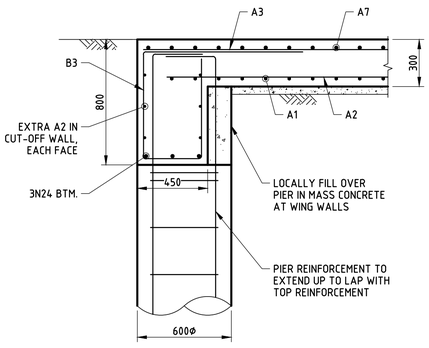
SLAB BEAM - SB1



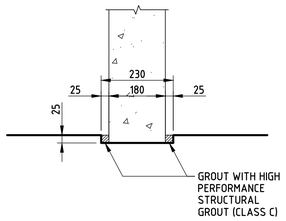
SLAB BEAM - SB4
AT WING WALL
SCALE: 1:20



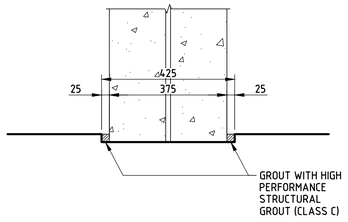
CUT-OFF WALL DETAIL
AT CULVERT SLAB
SCALE: 1:20
TYPICAL AT BOTH ENDS OF CULVERT BASE SLAB



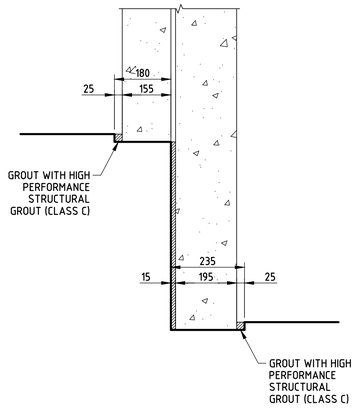
CUT-OFF WALL DETAIL
AT WING WALL
SCALE: 1:20



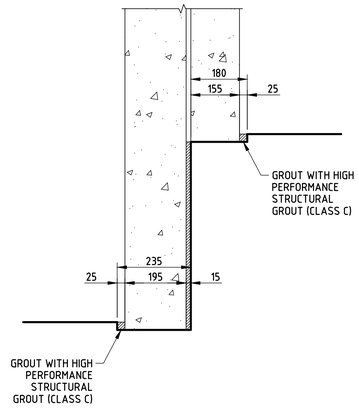
REBATE - R1
SCALE: 1:10



REBATE - R2
SCALE: 1:10



REBATE - R3
SCALE: 1:10



REBATE - R4
SCALE: 1:10

REV.	DATE	DETAILS	ENG	DFT.
A	24/08/2018	FOR TENDER ISSUE	RD	JM

REVISIONS

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Email: info@inhouseengineers.com.au
A.B.N. 44 066 587 719

DESIGNED: R DOHNT
DRAWN: M MILLICAN
SCALE: AS SHOWN (A1)
DATE: AUG' 2018

CLIENT: J. WYNDHAM PRINCE

Mr Roger E. Dohnt
DipTechEng, B.E. MIEAust, CPEng
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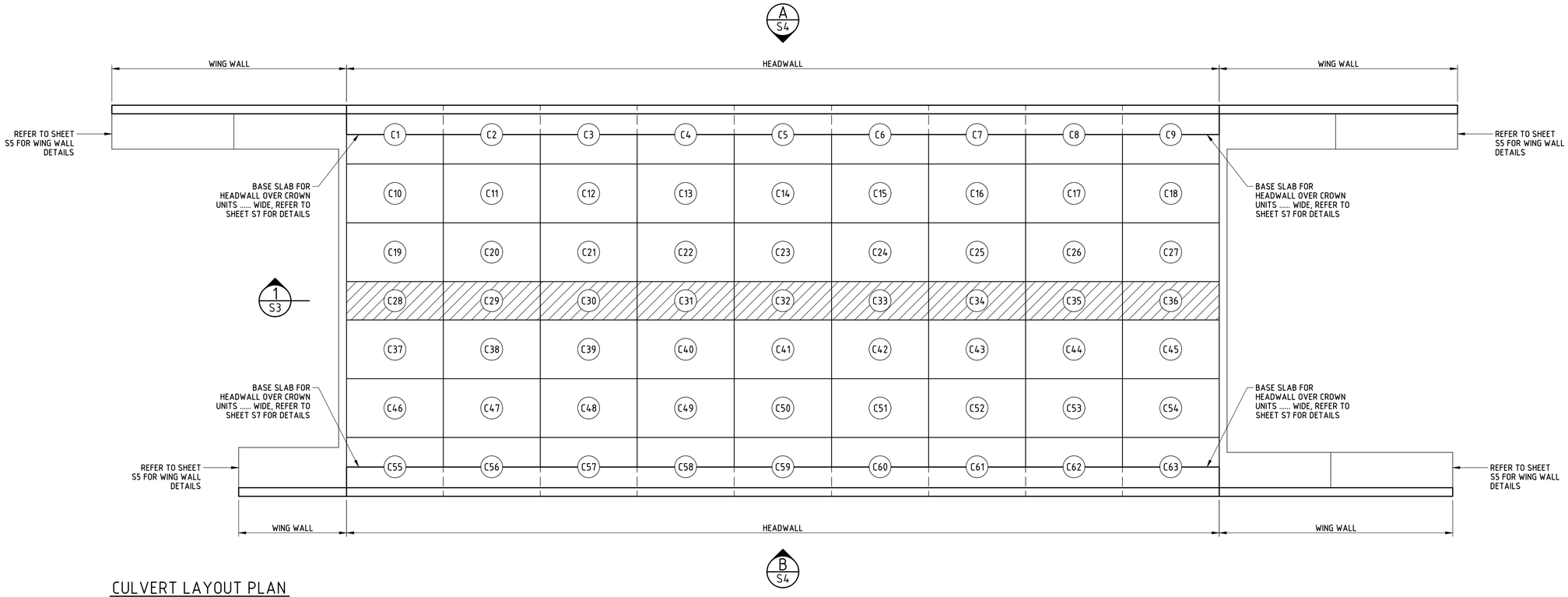
PROJECT: PROPOSED CULVERT AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING FOR J WYNDHAM PRINCE

JOB No. 16625

DRG No. S4

DRG TITLE: CULVERT SLAB DETAILS & SECTIONS

REV. -



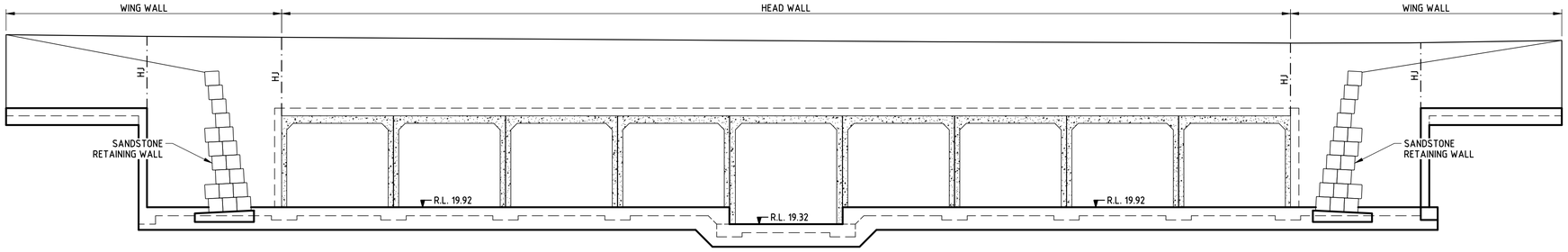
CULVERT LAYOUT PLAN

SCALE: 1:100

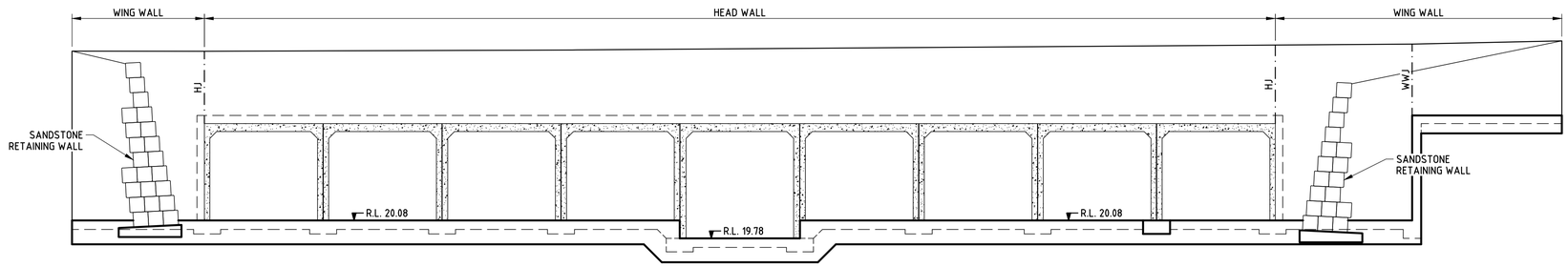
HJ HEAD WALL JOINT, REFER TO SHEET S5 FOR DETAILS. MUST BE IN SAME LOCATION AS DKJ IN ROAD PAVEMENT ABOVE

DZ DENOTES DOWEL ZONE FOR OFFSET JOINTS ABOVE. REFER TO DETAIL ON SHEET S7

CULVERT SCHEDULE	
CULVERT No.	CULVERT SIZE
C1-C4, C6-C9	3600 x 3000
C10-13, C15-C18	3600 x 3000
C19-C22, C24-C27	3600 x 3000
C28-C31, C33-C36	3600x3000 LENGTH CUT TO SUIT
C32	3600x3600 LENGTH CUT TO SUIT
C37-C40, C42-C45	3600 x 3000
C46-C49, C51-C54	3600 x 3000
C55-C58, C60-C63	3600 x 3000
C5, C14, C23, C41, C50, C59	3600 x 3600



ELEVATION A S1
SCALE 1:100



ELEVATION B S1
SCALE 1:100

LEGEND
HJ - DENOTES HEADWALL JOINT
DKJ - DENOTES LOCATION OF DOWEL KEY JOINT IN FOOTPATH ABOVE
DZ - DENOTES DOWEL ZONE, REFER TO DETAIL ON DRAWING S5

SANDSTONE RETAINING WALL SHOWN INDICATIVELY, REFER TO DRAWING S5 FOR DETAILS

REV.	DATE	DETAILS	ENG	DFT.
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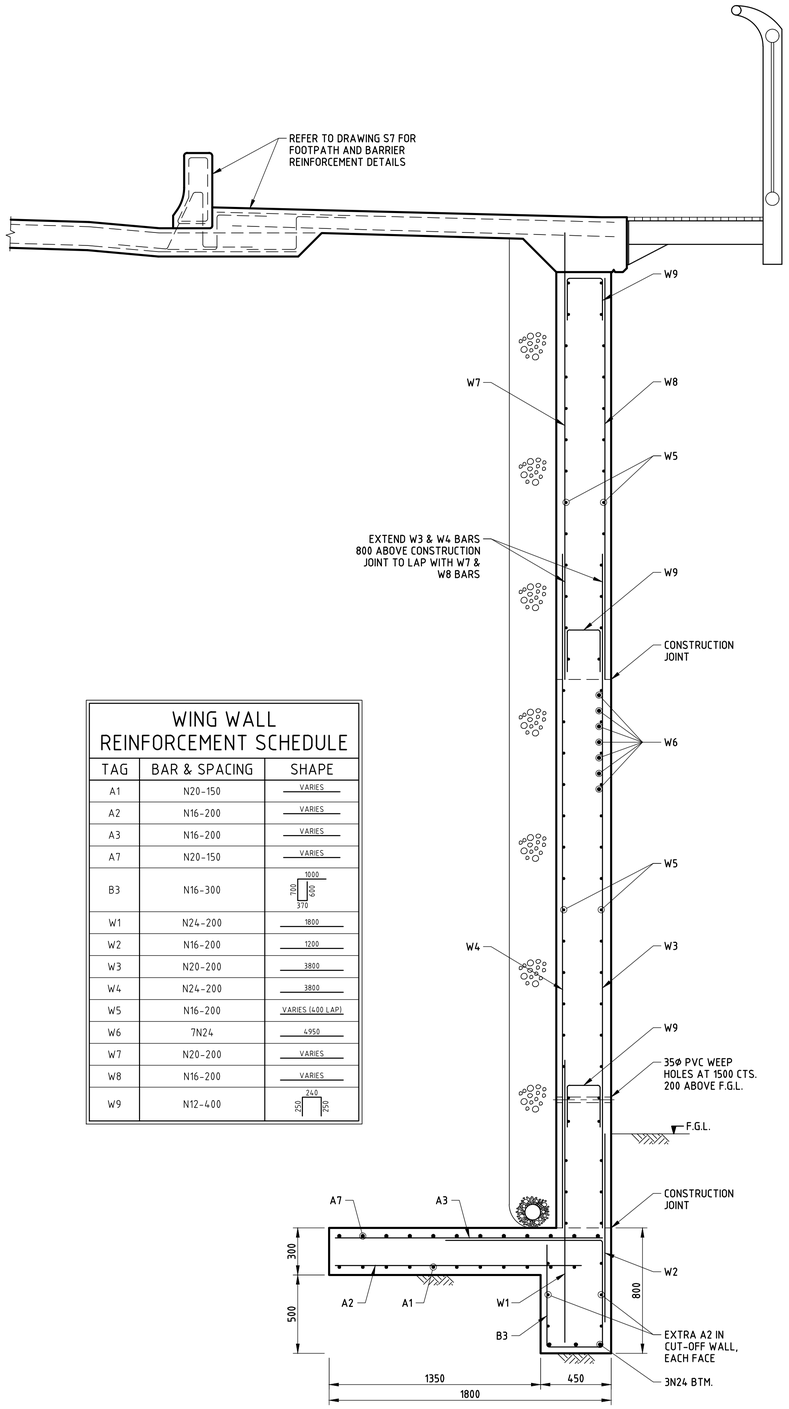
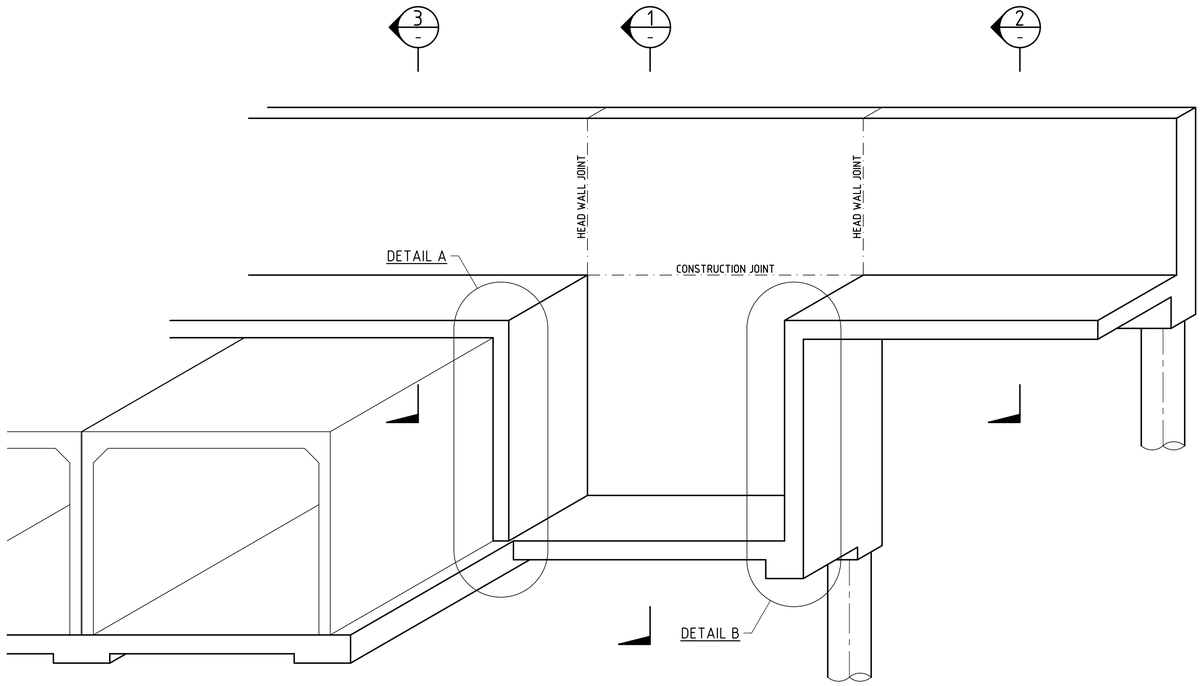
PROJECT
PROPOSED CULVERT
AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING
FOR J WYNDHAM PRINCE

DRG TITLE
CULVERT LAYOUT PLAN & ELEVATIONS

JOB No. 16625
DRG No. S5
REV. -

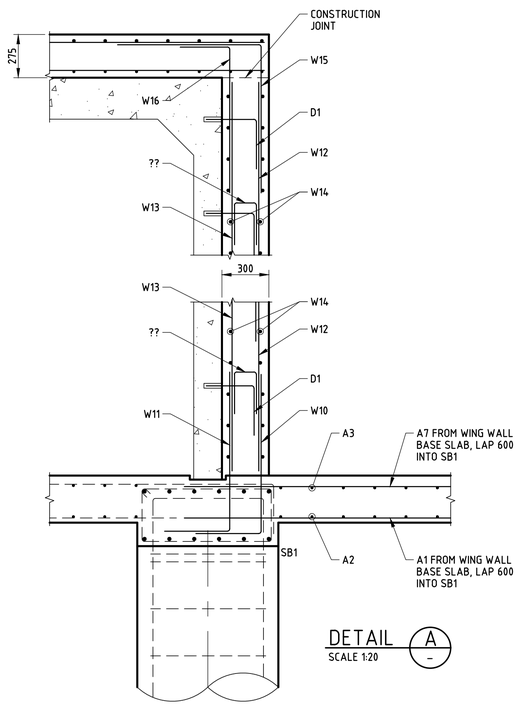


SECTION 1
SCALE 1:20



WING WALL ISOMETRIC VIEW
SCALE: 1:50

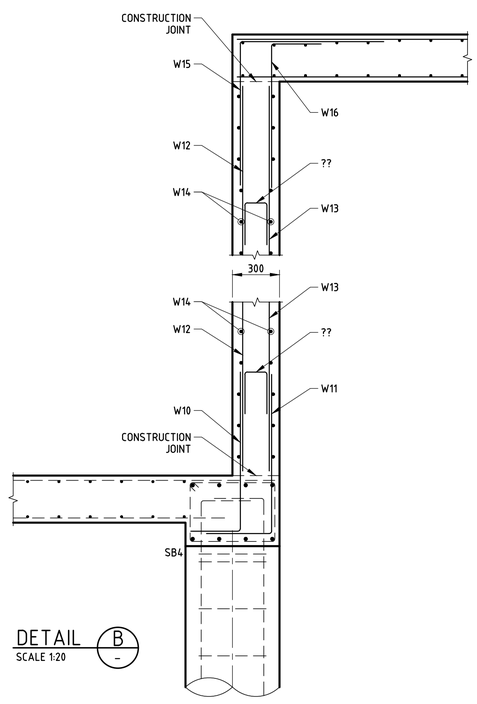
WING WALL REINFORCEMENT SCHEDULE		
TAG	BAR & SPACING	SHAPE
A1	N20-150	VARIES
A2	N16-200	VARIES
A3	N16-200	VARIES
A7	N20-150	VARIES
B3	N16-300	1000 / 700 / 600 / 370
W1	N24-200	1800
W2	N16-200	1200
W3	N20-200	3800
W4	N24-200	3800
W5	N16-200	VARIES (400 LAP)
W6	7N24	4950
W7	N20-200	VARIES
W8	N16-200	VARIES
W9	N12-400	240 / 200 / 250



DETAIL A
SCALE 1:20

WING WALL REINFORCEMENT SCHEDULE		
TAG	BAR & SPACING	SHAPE
W10/W11	N20-200	1100 / 400
W12	N20-200	3150
W13	N20-200	3350
W14	N20-200	1700
W15	N20-200	900 / 900
W16	N20-200	300 / 900
D1	N12-600	300 / 300

D1 DOWELS INTO CULVERT UNIT AT 600 CTS. BOTH WAYS, 100 DEEP EPOXY GROUT



DETAIL B
SCALE 1:20

REV.	DATE	DETAILS	ENG	DFT.
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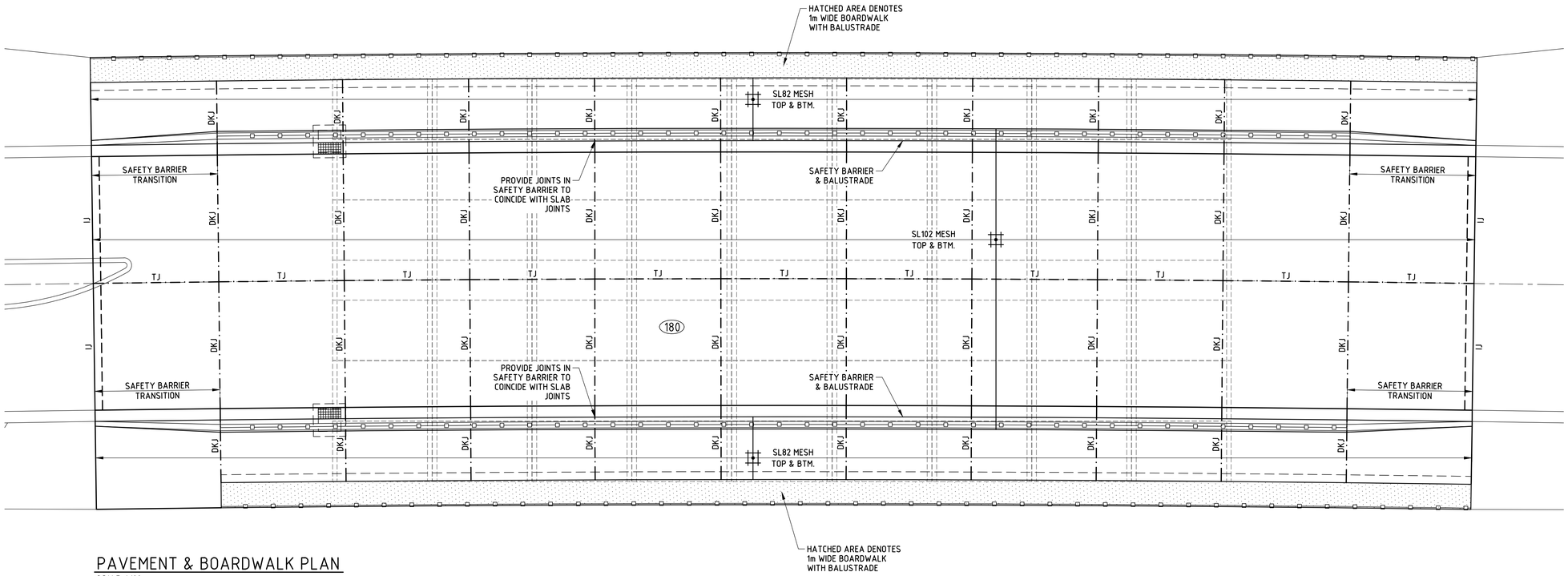
PROJECT: PROPOSED CULVERT AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING FOR J WYNDHAM PRINCE

JOB No. 16625

DRG No. S6

DRG TITLE: WING WALL DETAILS

REV. -



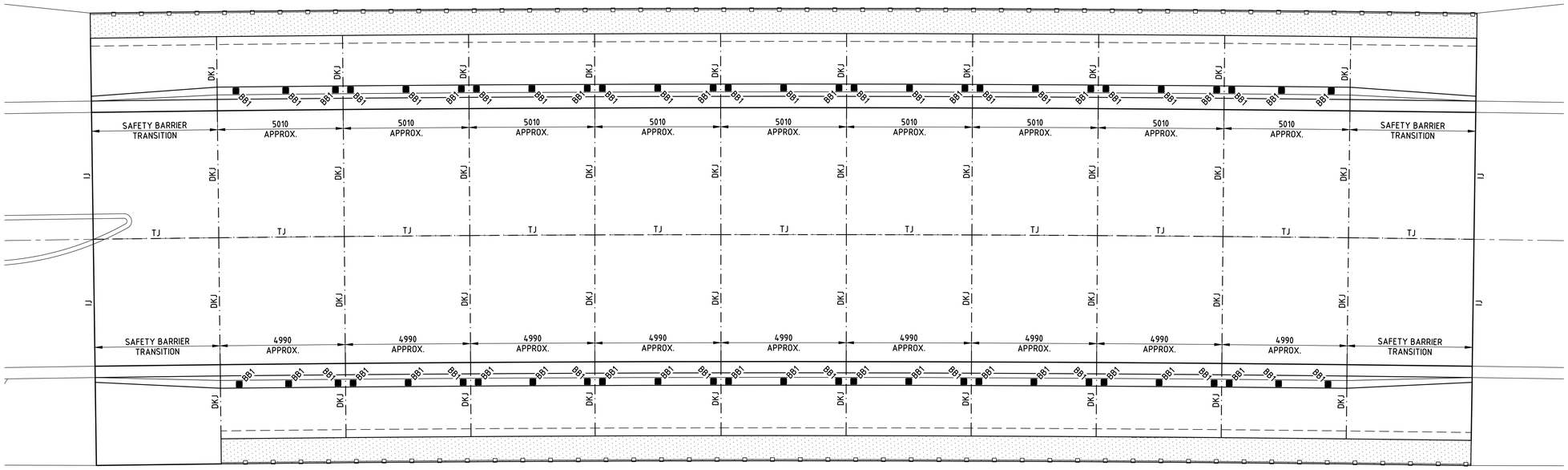
PAVEMENT & BOARDWALK PLAN

SCALE: 1:100

SLABS MUST BE POURED IN ALTERNATING BAYS WITH AT LEAST 5 DAYS CURING TIME BETWEEN ADJACENT POURS

PAVEMENT JOINT LEGEND

IJ - ISOLATION JOINT
TJ - TRANSVERSE JOINT
DKJ - DOWELED KEY JOINT



BARRIER LAYOUT PLAN

SCALE: 1:100

REV.	DATE	DETAILS	ENG	DFT.
A	24/08/2018	FOR TENDER ISSUE	RD	JM

REVISIONS

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Website: www.inhouseengineers.com.au
Email: info@inhouseengineers.com.au
A.B.N. 44 066 587 719

DESIGNED: R DOHNT
DRAWN: M MILLICAN
SCALE: 1:100 (A1)
DATE: AUG' 2018

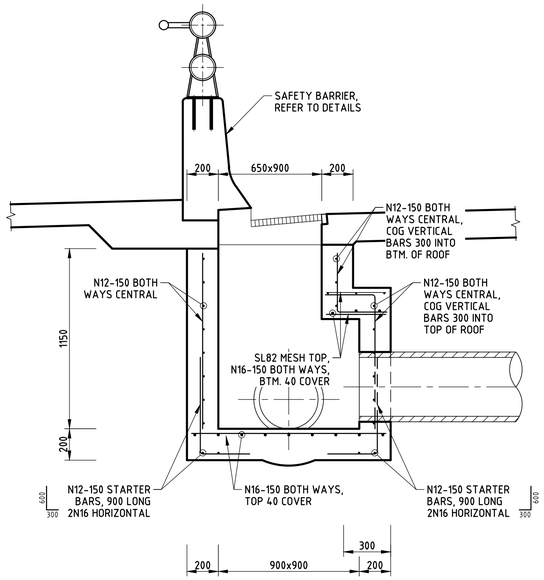
CLIENT: J. WYNDHAM PRINCE

Mr Roger E. Dohnt
DipTechEng, B.E. MIEAust, CPEng
ENGINEERS AUSTRALIA
Signature ..... Date 24 / 08 / 18
Registered on the National Engineering Register
in the following areas of practice
Civil / Structural - N.E.R. No. 61807

PROJECT: PROPOSED CULVERT
AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING
FOR J WYNDHAM PRINCE

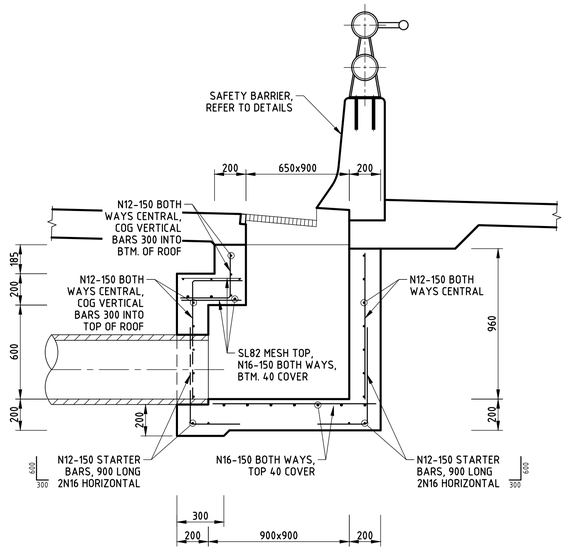
DRG TITLE: PAVEMENT, BOARDWALK & BARRIER LAYOUT PLANS

JOB No. 16625
DRG No. S7
REV. -



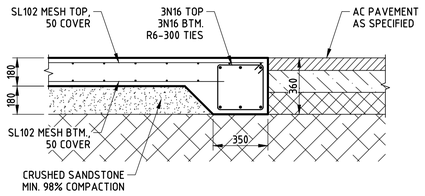
SPECIAL PIT - B20/2

SCALE: 1:20



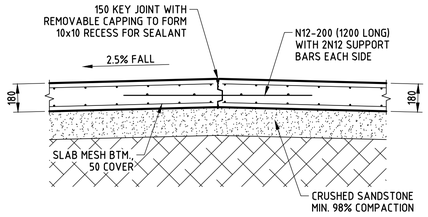
SPECIAL PIT - B20/1

SCALE: 1:20



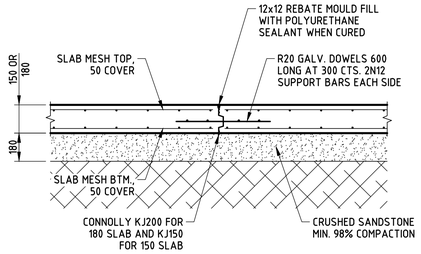
ISOLATION JOINT - IJ

SCALE: 1:20



TRANSVERSE JOINT - TJ

SCALE: 1:20



DOWELED KEY JOINT - DKJ

SCALE: 1:20

REV.	DATE	DETAILS	ENG	DFT.
A	24/08/2018	FOR TENDER ISSUE	RD	JM

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DESIGNED: R DOHNT
DRAWN: M MILLICAN
SCALE: 1:20 (A1)
DATE: AUG' 2018

CLIENT: J. WYNDHAM PRINCE

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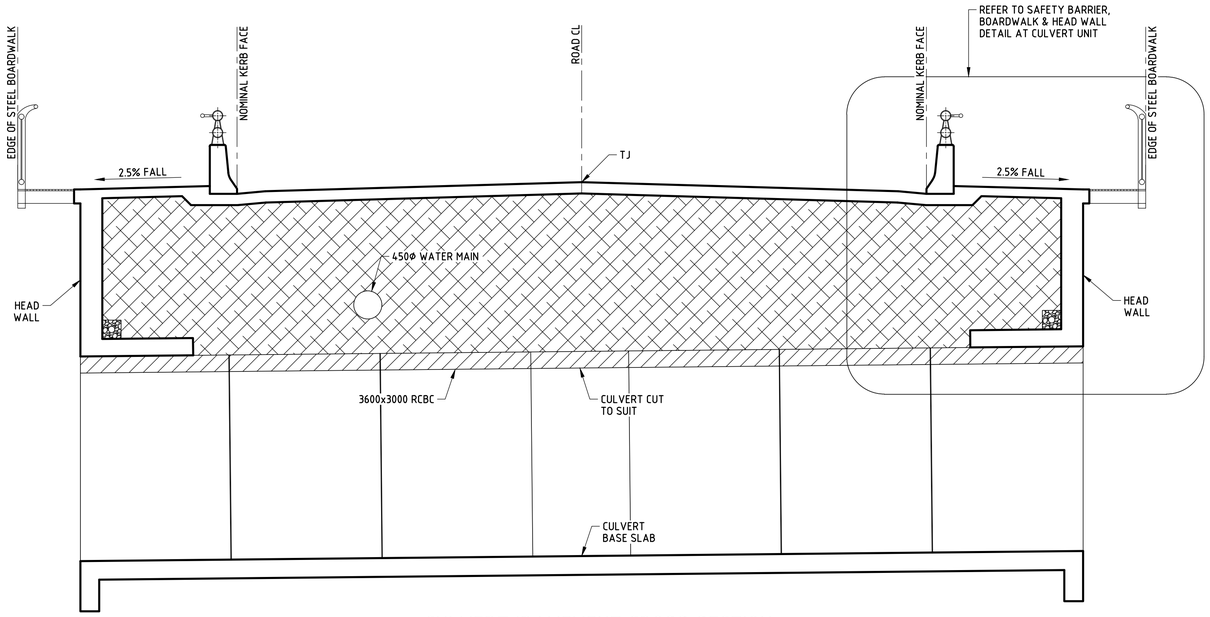
PROJECT: PROPOSED CULVERT
AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING
FOR J WYNDHAM PRINCE

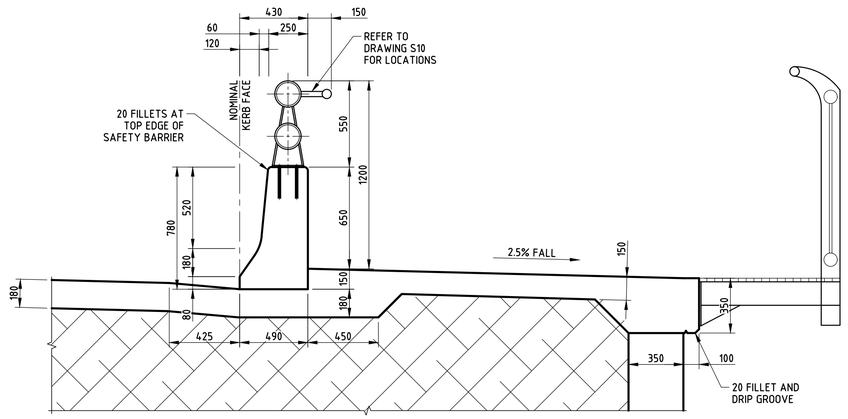
DRG TITLE: SPECIAL PIT & PAVEMENT JOINT DETAILS

JOB No. 16625
DRG No. S8
REV. -



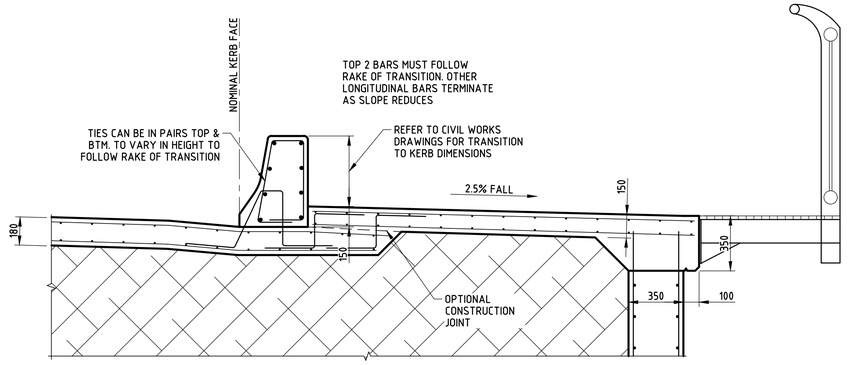
CULVERT/PAVEMENT CROSS SECTION AT RCBC CULVERT UNITS

SCALE: 1:50



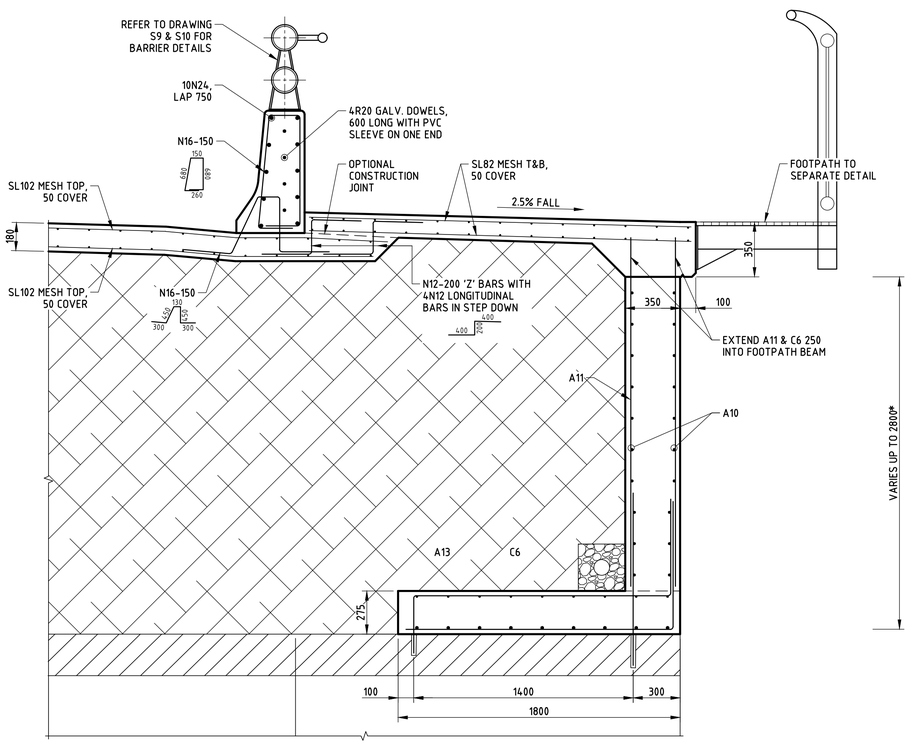
SAFETY BARRIER, BOARDWALK GENERAL LAYOUT

SCALE: 1:20



SECTION 1/S6

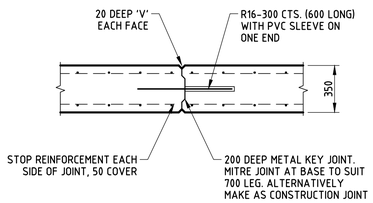
SCALE 1:20



SAFETY BARRIER, BOARDWALK & HEAD WALL DETAIL AT CULVERT UNIT

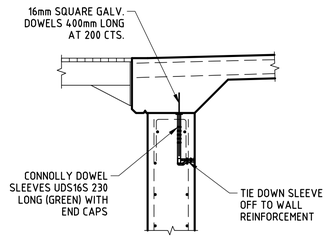
SCALE: 1:20

HEAD WALL REINFORCEMENT SCHEDULE		
TAG	BAR & SPACING	SHAPE
A10	N16-200	VARIES (400 LAP)
A11	N20-200	VARIES
A12	N20-200	VARIES (400 LAP)
A13	N12-200	VARIES (400 LAP)
C5	N16-200	800 ???
C6	N16-200	320 ??? VARIES



HEADWALL JOINT - HJ

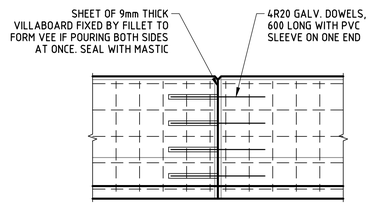
SCALE: 1:20



DETAIL TOP OF HEADWALL WHERE MARKED DZ ON PLAN (S4)

SCALE: 1:20

NOTE: ALL VERTICAL BARS IN WALL ARE TO BE TERMINATED 50mm BELOW TOP OF WALL



BARRIER JOINT DETAIL

SCALE: 1:20

REV.	DATE	DETAILS	ENG	DFT.
A	24/08/2018	FOR TENDER ISSUE	RD	JM

REVISIONS

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A.B.N. 44 066 587 719

DESIGNED: R DOHNT
DRAWN: M MILLICAN
SCALE: 1:50, 10 (A1)
DATE: AUG' 2018

CLIENT: J. WYNDHAM PRINCE

Mr Roger E. Dohnt
DipTechEng, B.E. MIEAust, CPEng
ENGINEERS AUSTRALIA
Signature ..... Date 24 / 08 / 18
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Civil / Structural - N.E.R. No. 61807

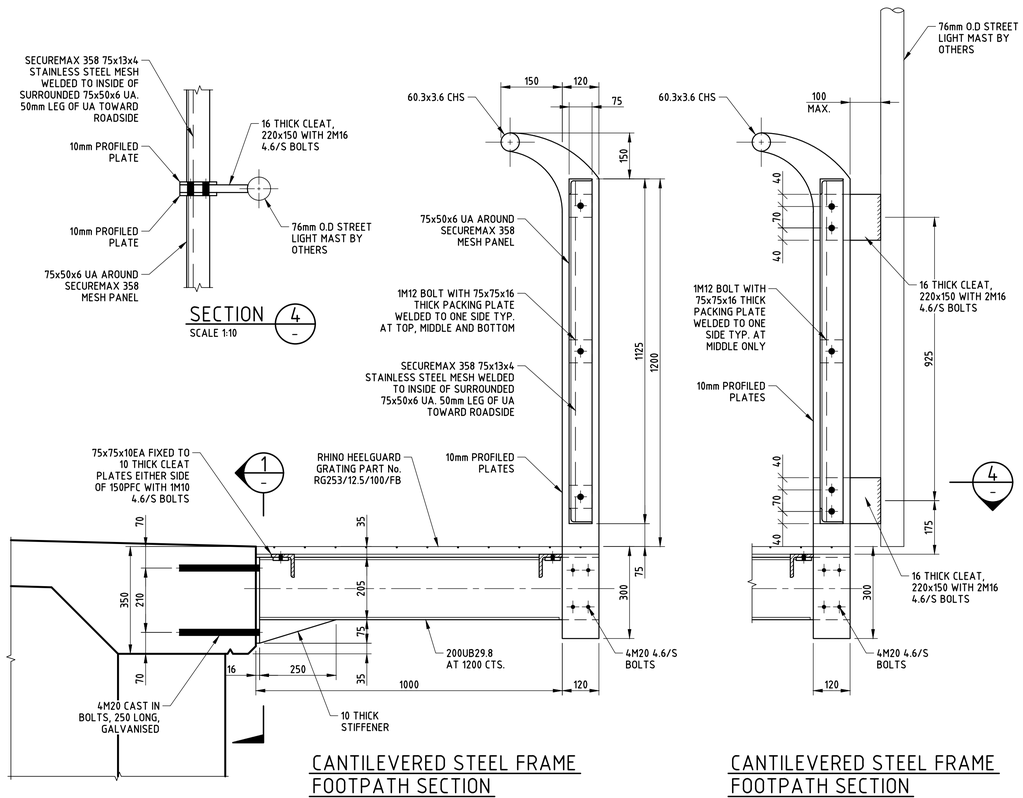
PROJECT: PROPOSED CULVERT AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING FOR J WYNDHAM PRINCE

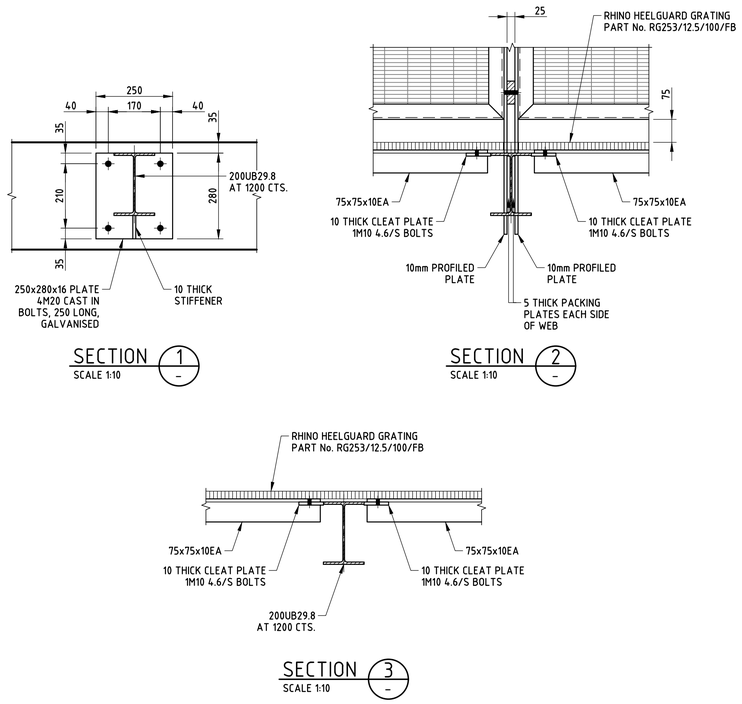
DRG TITLE: PAVEMENT & BOARDWALK DETAILS & SECTIONS

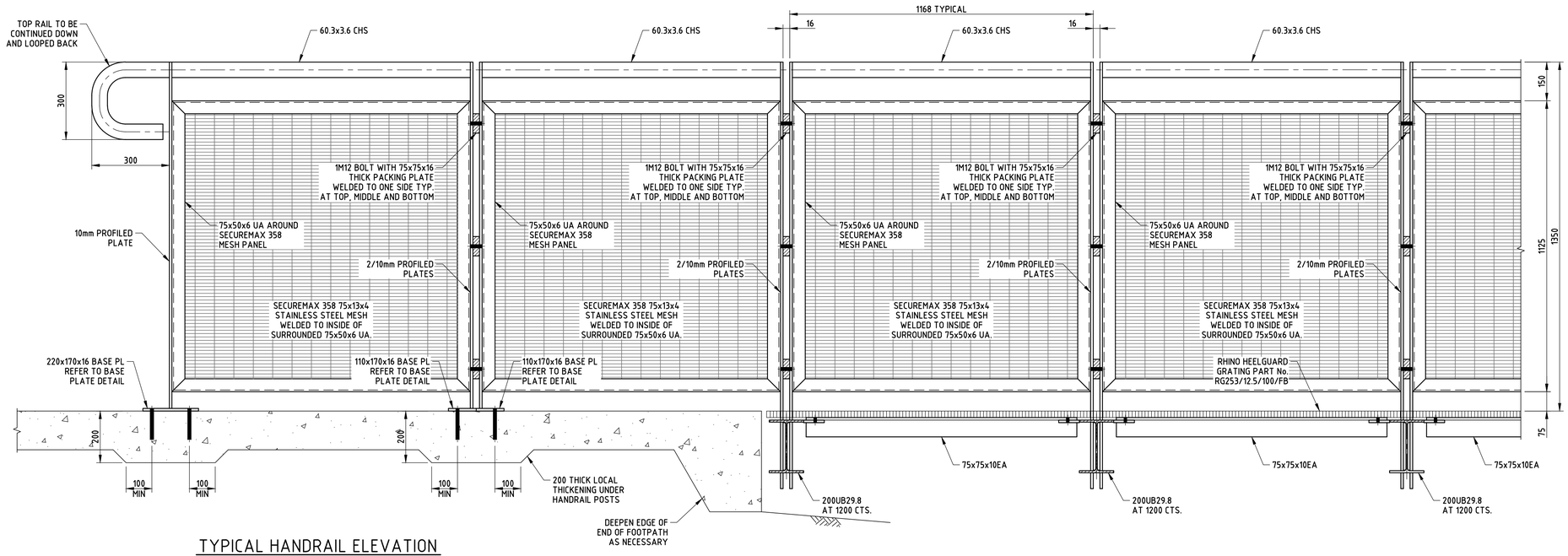
JOB No. 16625

DRG No. S9

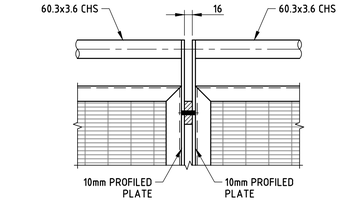
REV. -



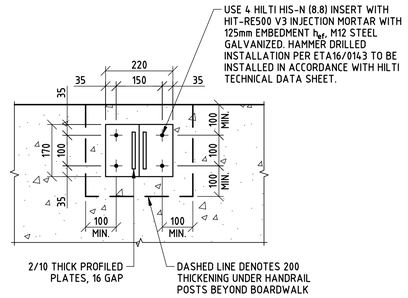




TYPICAL HANDRAIL ELEVATION
SCALE: 1:10



60.3x3.6 TOP RAIL DETAIL
SCALE: 1:10



HANDRAIL BASE PLATE
SCALE: 1:10

NOTE:
BALUSTRADES ARE TO BE FABRICATED AS FULLY WELDED ASSEMBLIES, THEN HOT DIP GALVANISED AND POWDER COATED, COLOUR "MONUMENT GREY" READY FOR INSTALLATION

REV.	DATE	DETAILS	ENG	DFT.
C	03/10/2018	FOR TENDER ISSUE	RD	MM
B	24/09/2018	FOR TENDER ISSUE	RD	MM
A	24/08/2018	FOR TENDER ISSUE	RD	JM

REVISIONS

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Email: info@inhouseengineers.com.au
A.B.N. 44 066 587 719

DESIGNED R DOHNT
DRAWN M MILLICAN
SCALE 1:10 (A1)
DATE AUG' 2018

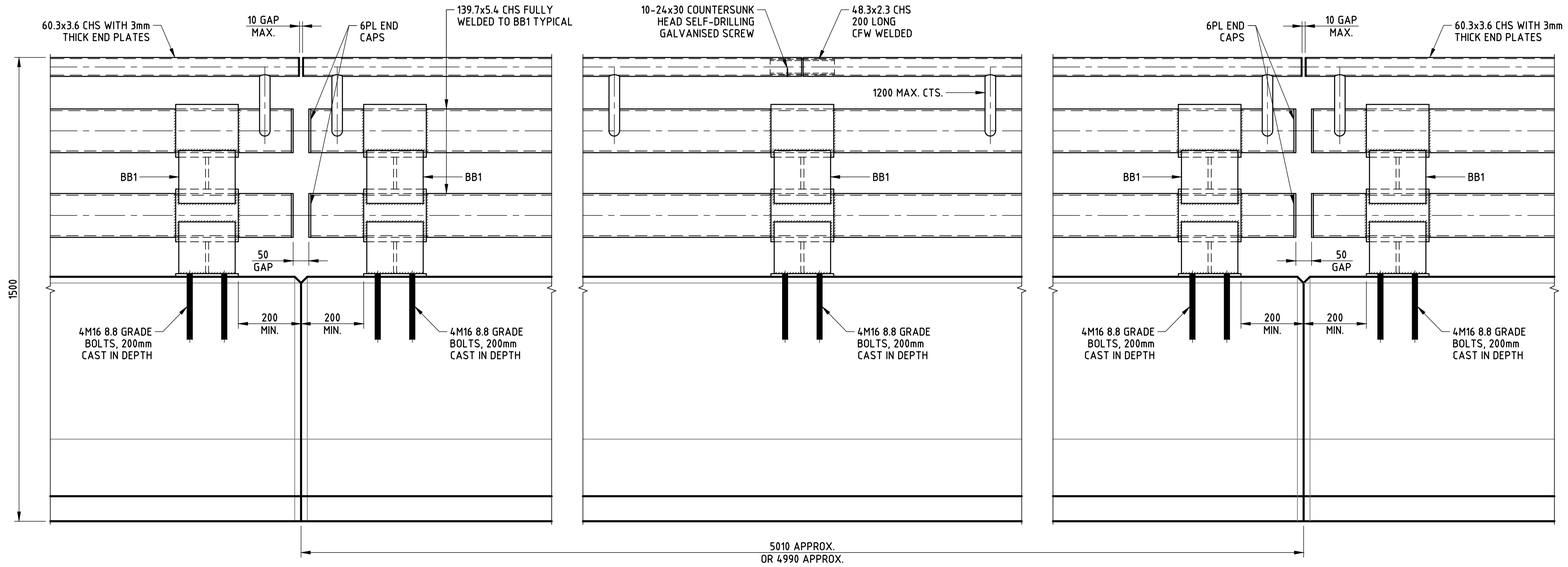
CLIENT J. WYNDHAM PRINCE

Mr Roger E. Dohnt
DipTechEng, B.E. MIEAust, CPEng
ENGINEERS AUSTRALIA
Signature ..... Date 03 / 10 / 18
Registered on the National Engineering Register in the following area/s of practice
Civil / Structural - N.E.R. No. 61807

PROJECT
PROPOSED CULVERT
AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING
FOR J WYNDHAM PRINCE

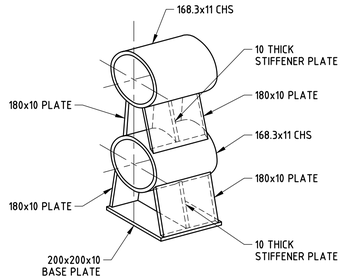
DRG TITLE
CANTILEVERED FOOTPATH DETAILS

JOB No. 16625
DRG No. S10
REV. C



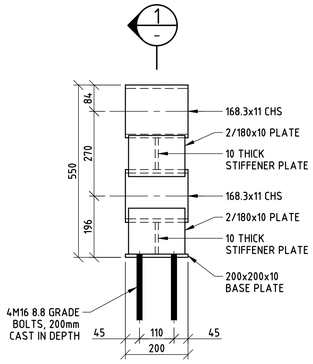
BARRIER TYPE 1 DETAIL

SCALE: 1:10



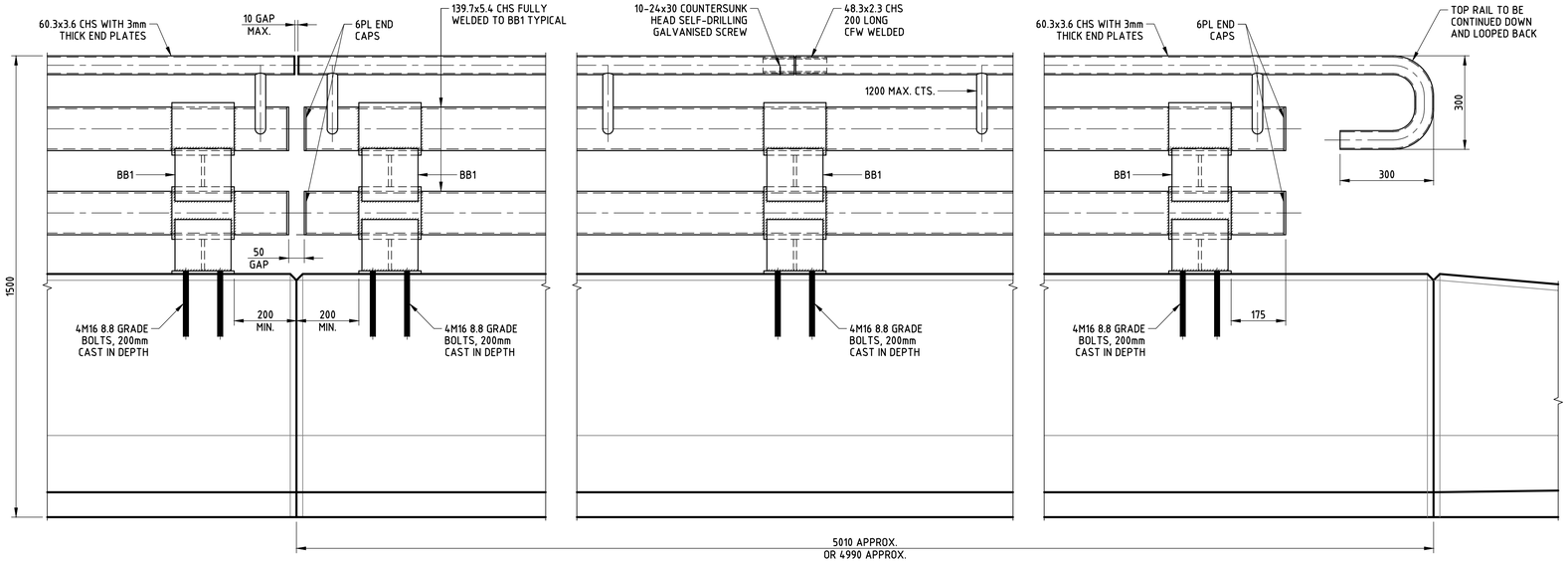
BARRIER BRACKET - BB1 ISOMETRIC VIEW

SCALE: 1:10



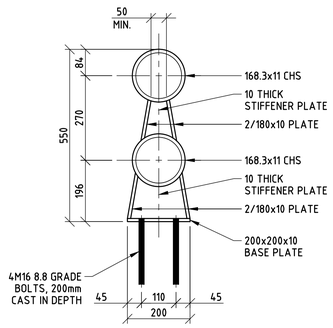
BARRIER BRACKET - BB1

SCALE: 1:10



BARRIER TYPE 2 DETAIL

SCALE: 1:10



SECTION 1 / -

SCALE 1:10

NOTE:

BARRIERS AND BRACKET TYPES 1 & 2 ARE TO BE FABRICATED AS FULLY WELDED ASSEMBLIES, THEN HOT DIP GALVANISED AND POWDER COATED, COLOUR "MONUMENT GREY" READY FOR INSTALLATION ON CAST IN BOLTS

REV.	DATE	DETAILS	ENG	DFT.
A	24/08/2018	FOR TENDER ISSUE	RD	JM

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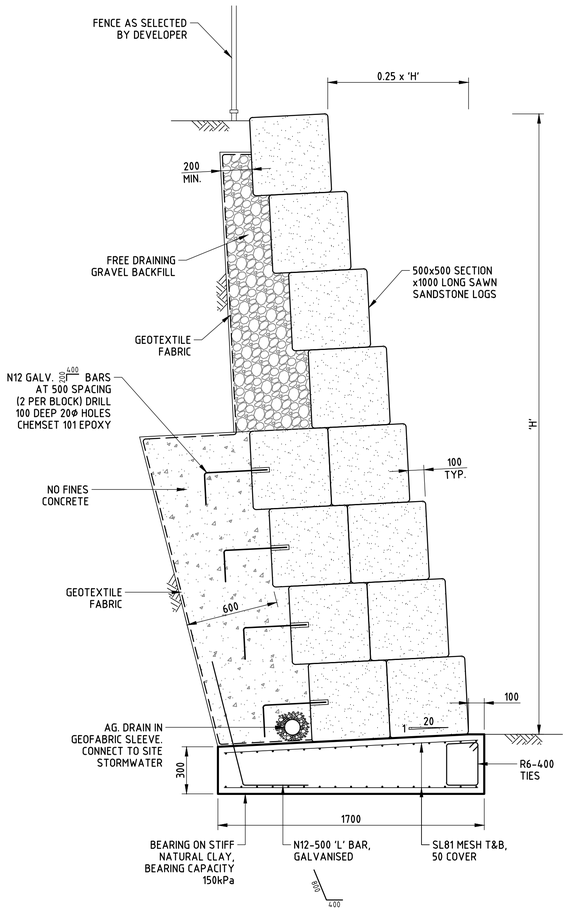
PROJECT: PROPOSED CULVERT AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING FOR J WYNDHAM PRINCE

DRG TITLE: BARRIER DETAILS

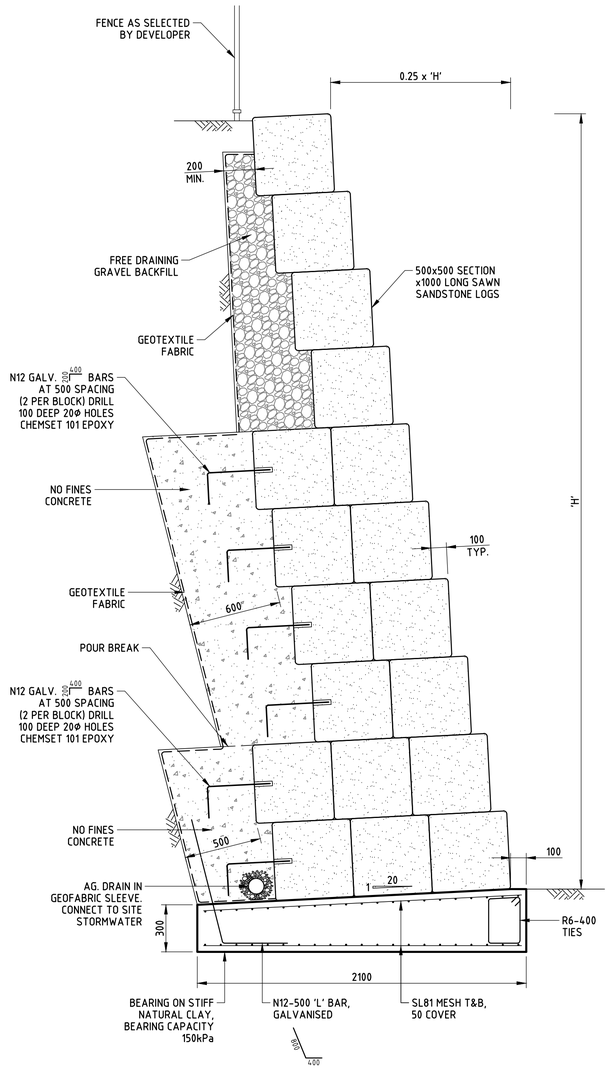
JOB No. 16625

DRG No. S11

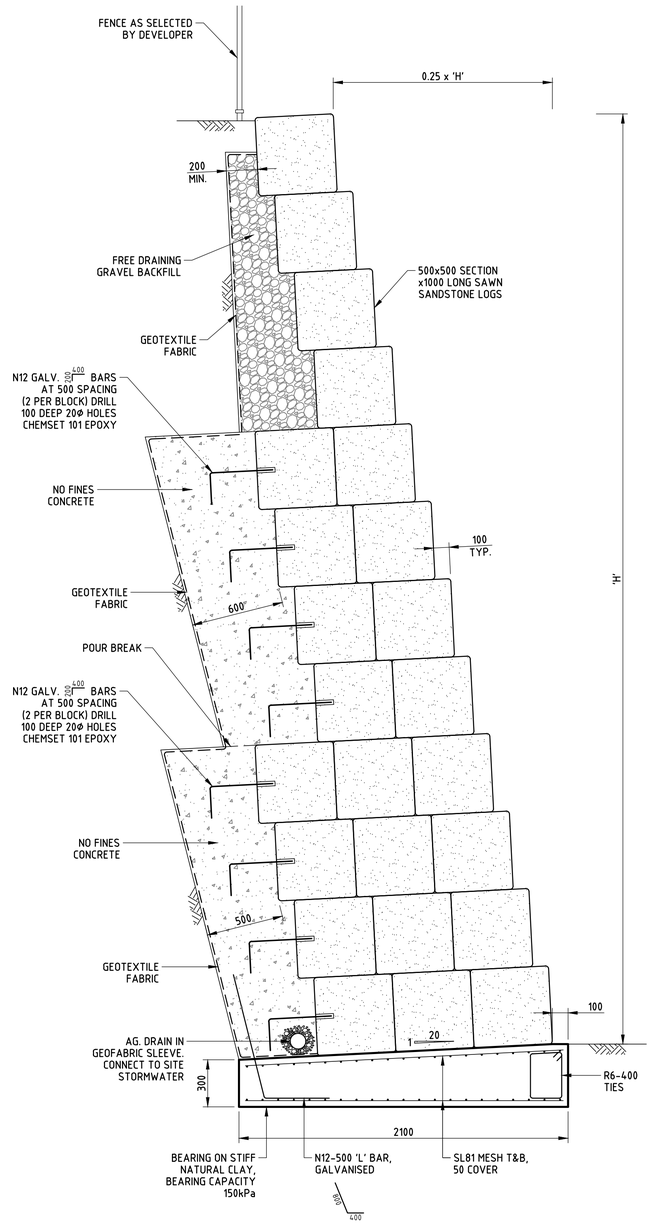
REV. -



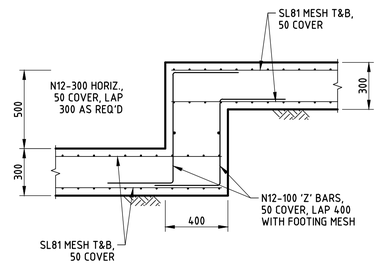
SANDSTONE RETAINING WALL
7-8 COURSES - 3.5m-4.0m HIGH
SCALE: 1:20



SANDSTONE RETAINING WALL
9-10 COURSES - 4.5m-5.0m HIGH
SCALE: 1:20



SANDSTONE RETAINING WALL
11-12 COURSES - 5.5m-6.0m HIGH
SCALE: 1:20



SANDSTONE LOG RETAINING WALL
FOOTING STEP DETAIL
SCALE: 1:20

ANY ROCK TO BE USED IN RETAINING WALLS IS TO BE CERTIFIED BY A GEOTECHNICAL ENGINEER AS SUITABLE FOR THE REQUIRED DESIGN LIFE

REV.	DATE	DETAILS	ENG	DFT.
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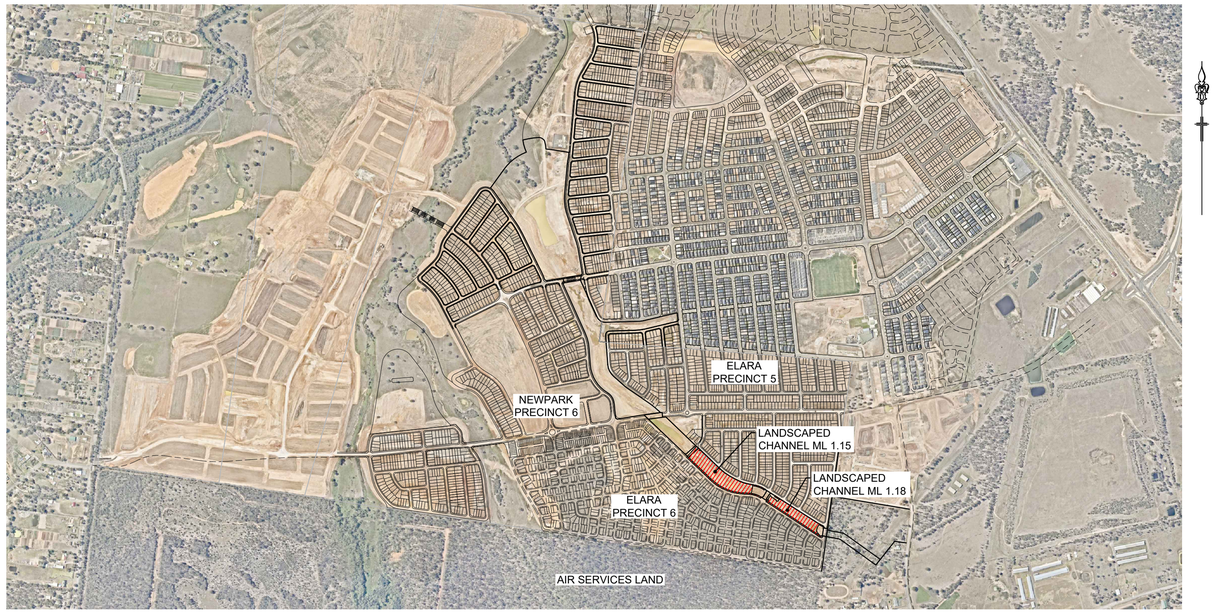
PROJECT: PROPOSED CULVERT AT ELARA - PRECINCT 6 ABELL ROAD CULVERT CROSSING FOR J WYNDHAM PRINCE

DRG TITLE: SANDSTONE RETAINING WALL DETAILS

JOB No. 16625
DRG No. S12
REV. -

Stockland

ELARA : TC01 - PART 1
SECTION 7.11 CONSTRUCTION CERTIFICATE
CONTRIBUTION PLAN No.21, ITEMS ML1.15, ML1.18
COUNCIL REFERENCE: JRPP-15-02324



LOCALITY SKETCH

Prepared By:

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300
W www.jwprince.com.au
E jwp@jwprince.com.au

ISSUED FOR CONSTRUCTION APPROVAL

PLAN No. 11035005/CC300 A

FILE No. 11035005CC300

Plotted: November 6, 2018 File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC300.dwg

LEGEND

DESCRIPTION	PROPOSED	EXISTING	FUTURE
EXTENT OF WORKS			
KERB & GUTTER	K&G		
ROLL KERB	RK		
DISH CROSSING	DC		
PRAM RAMP			
DRAINAGE LINE, PIT & EASEMENT	05/05 Ø225		
DRAINAGE LINE & PIT	05/06 Ø600		
SUBSOIL DRAINAGE	SS		
HEADWALL			
CONTOURS	46.0	47.0	
CATCH DRAIN			
ELECTRICITY, POWER POLE	E	eE PP eE	
TELECOM, BOX	T	eT eT eT eT	
WATER, STOP VALVE, HYDRANT	W	eW HYD eW SV eW	
SEWER, MANHOLE	S	eS eS SMH	
GAS	G	eG eG eG	
STABILISED SITE ACCESS			
SEDIMENT FENCE			
STRAW BALE BARRIER			
STOCKPILE	SP		
PROTECTIVE FENCING			
MESH AND GRAVEL INLET FILTER			
GEOTEXTILE INLET FILTER			
CATCHMENT BOUNDARY			
FLOW DIRECTION ARROW			
FLOOD PLANNING EVENT			
FLOOD PLANNING EVENT CONTOUR	52.5		

CIVIL PLAN INDEX

PLAN NO.	PLAN NAME	REV
11035005/CC300	COVER SHEET	A
11035005/CC301	NOTES, INDEX AND LEGEND	A
11035005/CC302	OVERALL ARRANGEMENT PLAN	A
11035005/CC303	PAVEMENT AND GROUND COVER PLAN	A
11035005/CC304	ENGINEERING PLAN SHEET 1	A
11035005/CC305	ENGINEERING PLAN SHEET 2	A
11035005/CC306	ENGINEERING PLAN SHEET 3	A
11035005/CC307	ENGINEERING PLAN SHEET 4	A
11035005/CC308	SETOUT TABLES AND FOOTPATH DETAILS	A
11035005/CC309	CUT / FILL PLAN SHEET 1	A
11035005/CC310	CUT / FILL PLAN SHEET 2	A
11035005/CC311	CHANNEL LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC312	CHANNEL LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC313	CHANNEL AND FOOTPATH LONGITUDINAL SECTIONS SHEET 3	A
11035005/CC314	FOOTPATH LONGITUDINAL SECTIONS	A
11035005/CC315	CROSS SECTIONS PLAN SHEET 1	A
11035005/CC316	CROSS SECTIONS PLAN SHEET 2	A
11035005/CC317	CROSS SECTIONS SHEET 1	A
11035005/CC318	CROSS SECTIONS SHEET 2	A
11035005/CC319	CROSS SECTIONS SHEET 3	A
11035005/CC320	CROSS SECTIONS SHEET 4	A
11035005/CC321	CROSS SECTIONS SHEET 5	A
11035005/CC322	CROSS SECTIONS SHEET 6	A
11035005/CC323	CROSS SECTIONS SHEET 7	A
11035005/CC324	CROSS SECTIONS SHEET 8	A
11035005/CC325	CROSS SECTIONS SHEET 9	A
11035005/CC326	POCKET PARK RETAINING WALL DETAILS SHEET 1	A
11035005/CC327	POCKET PARK RETAINING WALL DETAILS SHEET 2	A
11035005/CC328	TAILOUT LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC329	TAILOUT LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC330	SOIL AND WATER MANAGEMENT PLAN SHEET 1	A
11035005/CC331	SOIL AND WATER MANAGEMENT PLAN SHEET 2	A
11035005/CC332	SOIL AND WATER MANAGEMENT NOTES	A
11035005/CC333	SIGNAGE AND LINEMARKING PLAN SHEET 1	A
11035005/CC334	SIGNAGE AND LINEMARKING PLAN SHEET 2	A
11035005/CC335	SIGNAGE AND LINEMARKING PLAN SHEET 3	A
11035005/CC336	SIGNAGE AND LINEMARKING PLAN SHEET 4	A

CONTRIBUTIONS PLAN (NO.21) ITEMS INCLUDED IN THIS APPLICATION

SITE NO.	DESCRIPTION
ML 1.15	LANDSCAPED OPEN CHANNEL
MP 1.18	LANDSCAPED OPEN CHANNEL

GENERAL NOTES

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S "WORKS SPECIFICATION - CIVIL 2005".
2. SURVEY MARKS: -
   a. SURVEY MARKS SHOWN SHALL BE RETAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE SUPERINTENDENT MUST BE NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL.
3. THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
4. THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE OWNERS. TO BE PROVIDED PRIOR TO THE APPROVAL OF THE PLANS.
5. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJOINING PROPERTIES.
6. COUNCIL'S TREE PRESERVATION ORDER MUST BE OBSERVED AND NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT THE PRIOR APPROVAL OF COUNCIL'S ENGINEER.
7. TREES TO BE RETAINED ON SITE SHALL BE PROTECTED BY SUITABLE STURDY APPROVED PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF SITE WORKS.
8. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES, OUT-HOUSES, CAR BODIES AND DEBRIS ETC.
9. FILLING IS TO BE FROM A NOMINATED SOURCE, OF SOUND CLEAN MATERIAL, FREE FROM LARGE ROCK, STUMPS, CONTAMINATED MATTER, INDUSTRIAL AND BUILDING WASTE, ORGANIC MATTER AND OTHER DEBRIS. PLACING OF FILLING ON THE PREPARED AREAS SHALL NOT COMMENCE UNTIL THE AUTHORITY TO DO SO HAS BEEN OBTAINED FROM THE COUNCIL.
10. THE FILL MATERIAL THAT MAY BE RECEIVED AT THE DEVELOPMENT SITE ARE EXCAVATED NATURAL MATERIALS (VENM) AND EXCAVATED NATURAL MATERIAL (ENM) WITHIN THE MEANING OF THE PROTECTION OF THE ENVIRONMENTAL OPERATIONS ACT1997.
11. SITE FILL AREAS: - THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
12. ALL SITE FILLING TO BE COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY A REGISTERED SOIL LABORATORY IN ACCORDANCE WITH COUNCIL'S "WORKS SPECIFICATION".
13. ALL SITE REGRADING AREAS SHALL BE GRADED AT A MINIMUM 1% TO THE ENGINEER'S REQUIREMENTS.
14. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED BY THE SUPERINTENDENT.
15. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS.
16. DIMENSIONS OF ANY DETAIL SHALL NOT BE SCALED - DIMENSIONS, IF IN DOUBT, SHALL BE VERIFIED BY THE SUPERINTENDENT.
17. ALL CONSTRUCTION AND RESTORATION WORK ON COUNCIL'S ROAD AND FOOTPATH AREA ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS AND COUNCIL'S STANDARD SPECIFICATIONS.
18. ALL WORKS TO BE IN ACCORDANCE WITH THE SALINITY MANAGEMENT PLAN BY GEOTECH TESTING PTY LTD 8537/2-AA
19. ALL STREET NAME POLES AND LIGHT POLES SHALL BE BLACK POWDER COATED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S ENGINEERING GUIDE FOR DEVELOPMENT.

SURVEYED BY:
BMD BULK EARTHWORKS SURFACE
CAD REFERENCE: tin BEW 171214.12daz
DATE RECEIVED: 29/01/2018

CRAIG & RHODES DRONE SURVEY
CAD REFERENCE: 20180213_C&R_MARSDEN-PARK_ELEVATION.dwg
DATE RECEIVED: 22/02/2018

SURFACE NOTES

1. BATTER SLOPES ARE TYPICALLY 1v:4h UNLESS NOTED OTHER WISE.

SURVEY SET OUT INFORMATION NOTES:

1. ALL SITE SET OUT AND CONTROL POINTS ARE TO BE CERTIFIED BY A REGISTERED SURVEYOR.
2. THE INFORMATION DETAILED ON THE CERTIFIED CONSTRUCTION CERTIFICATE PLANS TAKES PRECEDENCE OVER ALL ELECTRONIC INFORMATION PROVIDED. THE ORDER OF PRIORITY FOR USE OF ALL INFORMATION PROVIDED IS AS FOLLOWS:
   a. CERTIFIED CONSTRUCTION CERTIFICATE DRAWINGS
   b. 2D DRAFTING BASE (ELECTRONIC FILE)
   c. 3D DTM (ELECTRONIC FILE)
3. ANY DISCREPANCY BETWEEN ANY OF THE INFORMATION CONTAINED WITHIN THESE FILES IS TO BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT PRIOR TO CONSTRUCTION WHO WILL SEEK CLARIFICATION AND ISSUE INSTRUCTIONS ON THE APPROPRIATE COURSE OF ACTION.

STORMWATER NOTES

1. STORMWATER DESIGN CRITERIA:
   ANNUAL EXCEEDANCE PROBABILITY (AEP):
   1% AEP MAJOR SYSTEM
   10% AEP MINOR SYSTEM
2. PIPES TO BE INSTALLED TO TYPE HS2 SUPPORT IN ACCORDANCE WITH AS 3725 (1989) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 300mm LAYERS TO MINIMUM 100% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
3. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
4. GRATES AND COVERS SHALL CONFORM TO AS 3996.
5. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
6. DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH NON-COHESIVE SAND AND HAVE 3m OF SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK, DISCHARGING INTO DOWN STREAM PITS. FOR PIPELINES GREATER THAN 525Ø, SUBSOIL DRAIN SHALL BE PROVIDED ON BOTH SIDES OF THE TRENCH.
7. ALL STORMWATER PIPES WITHIN ROADS TO BE REINFORCED CONCRETE PIPE (RRJ) CLASS 2 OR FRC CLASS 2 UNLESS NOTED OTHERWISE.
8. DRAINAGE LINES ON PLANS ARE DIAGRAMMATIC ONLY AND PIPE CENTRELINES SHALL ENTER AND EXIT PITS AT THE CENTRE OF THE RESPECTIVE PIT WALLS.
9. STEP IRONS REQUIRED WHERE THE PIT EXCEEDS 1200 IN DEPTH. REFER TO COUNCIL DRAWING A(BS)107M.

NOTE:
THESE PLANS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING
- THE ELARA SECTION 94 DETAILED CONCEPT PLANS BY J.WYNDHAM PRINCE 11035005/DC01 - 72
- CULVERT CROSSING 1 ML 1.9 , REFER TO J.WYNDHAM PRINCE 11035005/CC150-CC164
- CULVERT CROSSING 2 ML 1.16 , REFER TO J.WYNDHAM PRINCE 11035005/CC200-CC216
- ABELL ROAD CULVERT CROSSING, REFER TO J.WYNDHAM PRINCE 11035005/CC250-CC300
- LANDSCAPE PLANS BY PATERSON DESIGN STUDIO

www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG

UTILITIES SHOWN ARE DIAGRAMMATIC ONLY, CONTRACTORS ARE RESPONSIBLE TO LOCATE AND AVOID DAMAGE TO THEM AS SPECIFIED BY EACH UTILITIES EXCAVATION GUIDE LINES & STANDARDS.

NOTE: UTILITIES SHOWN MAY NOT INCLUDE ALL SERVICES WITHIN THE LIMIT OF WORKS

	AMENDMENT	DES	DRN	CKD	APR	DATE
A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 1
NOTES, INDEX AND LEGEND

PLAN No: 11035005/CC301 A
FILE No: 11035005CC301
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 9:54:34 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC301.dwg

EXISTING ELARA
PRECINT 5 STAGE 43 AND 44
REFER TO J. WYNDHAM PRINCE PLANS
110350/CC700-775

EXISTING ELARA
PRECINT 5 STAGE 42
REFER TO J. WYNDHAM PRINCE
PLANS 110350/CC600-693

FUTURE ELARA
PRECINT 6 STAGE 47
REFER TO J. WYNDHAM PRINCE PLANS
11035003/CC300-334

FUTURE ELARA
PRECINT 6 STAGE 46
REFER TO J. WYNDHAM PRINCE PLANS
11035003/CC200-231

FUTURE ELARA
PRECINT 6 STAGE 45
REFER TO J. WYNDHAM PRINCE PLANS
11035003/CC100-132

ROAD 516
ROAD 520
ROAD 521
ROAD 522
ROAD 523
ROAD 524
ROAD 525
ROAD 527
ROAD 600
ROAD 612
ROAD 603
ROAD 615
ROAD 618
ROAD 617
ROAD 622
ROAD 623
ROAD 624
ROAD 625

TC01 REACH 1
TC01 REACH 2
TC01 REACH 3

CULVERT CROSSING 1 ML 1.19 , REFER TO JWP PLANS 110350CC150-CC164

CULVERT CROSSING 2 ML 1.16 , REFER TO JWP PLANS 110350CC200-CC216

SECTION 7.11 DRAINAGE CHANNEL
REFER TO 11035005CC250-CC300

CC307
CC306
CC305
CC304

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S94 WORKS
CHANNEL TC01 - PART 1
OVERALL ARRANGEMENT PLAN

PLAN No: 11035005/CC302 A
FILE No: 11035005CC302
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:54:49 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC302.dwg

LEGEND

SCOUR PROTECTION
REFER TO SHEET CC328 AND
CC329 FOR DETAILS

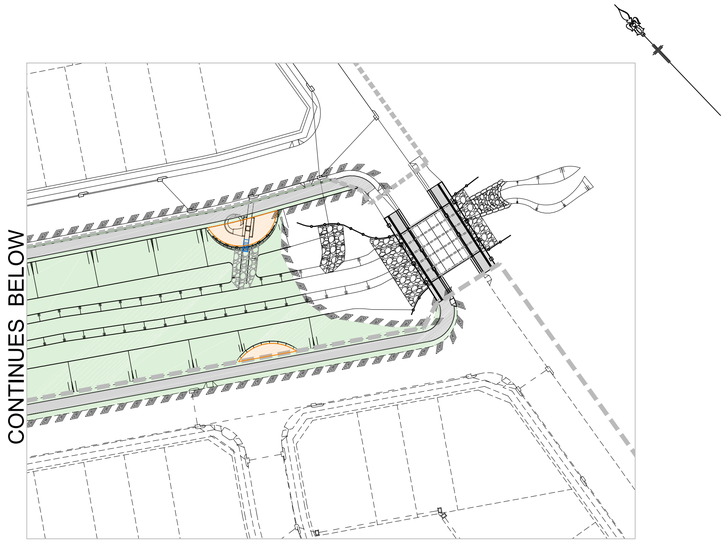
PAVEMENT (SHARED FOOTPATH)
CONCRETE (mm) = 125
SL82 MESH WITH 35mm TOP COVER

POCKET PARK
LANDSCAPE ARCHITECT'S SPECIFICATION

CHANNEL PLANTING
PLANTING TO LANDSCAPE ARCHITECT'S
SPECIFICATIONS

NOTES:

1) ALL FOOTPATHS AND SHARED PATHS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH BLACKTOWN COUNCIL'S PATH PAVING POLICY



1:750 (AT A1)

15 7.5 0 7.5 15 22.5 30 37.5 45 525. 60 67.5 75
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ORIGIN:

CLIENT:
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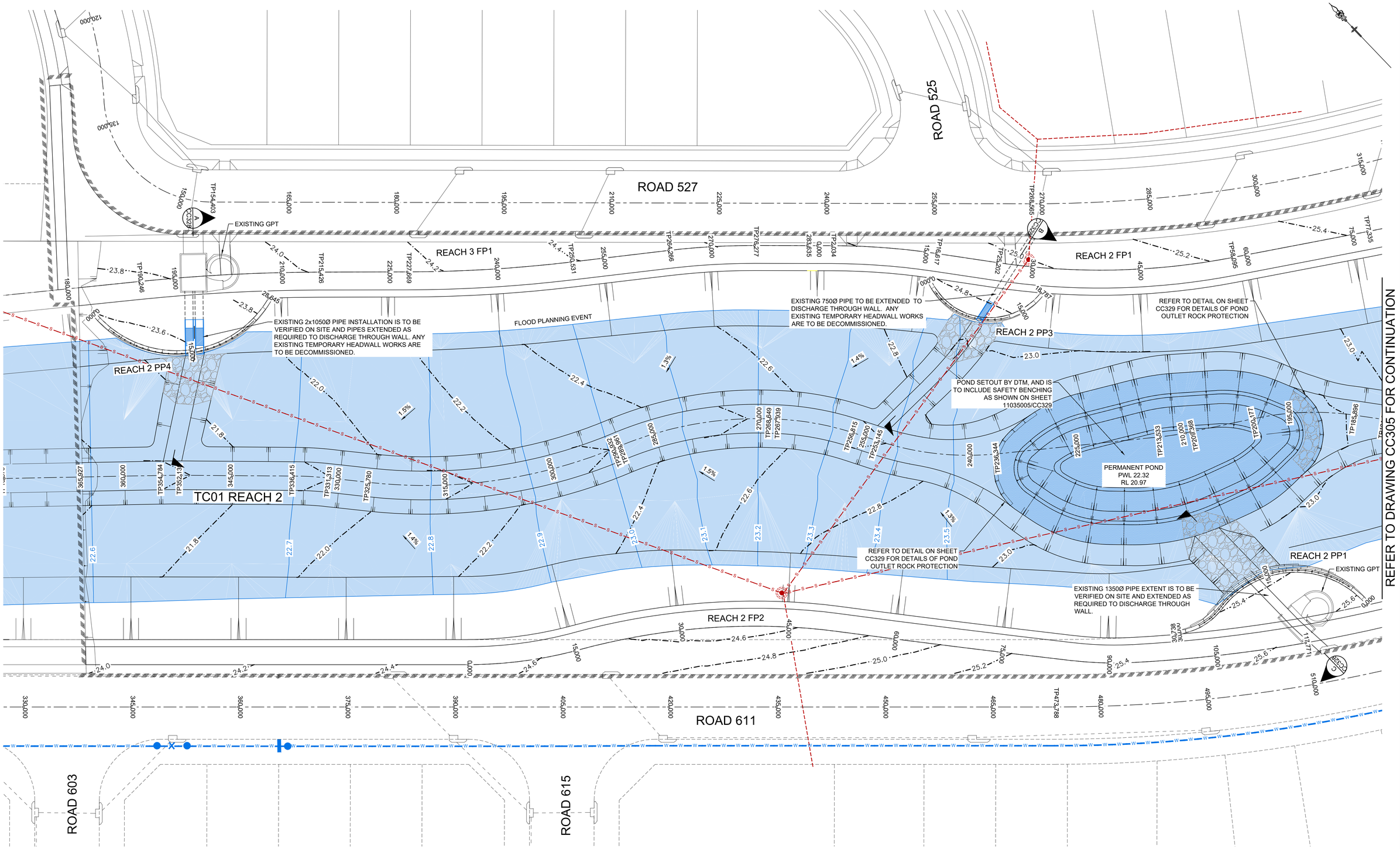
ELARA S94 WORKS
CHANNEL TC01 - PART 1
PAVEMENT AND GROUND COVER PLAN

PLAN No: 11035005/CC303 A
FILE No: 11035005CC303
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:55:13 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC303.dwg



1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

CLIENT:

Stockland

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ELARA S94 WORKS
CHANNEL TC01 - PART 1
ENGINEERING PLAN
SHEET 1

PLAN No: 11035005/CC304 A

FILE No: 11035005CC304

SHEET SIZE: A1 ORIGINAL

AZIMUTH:
DATUM:
ORIGIN:

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P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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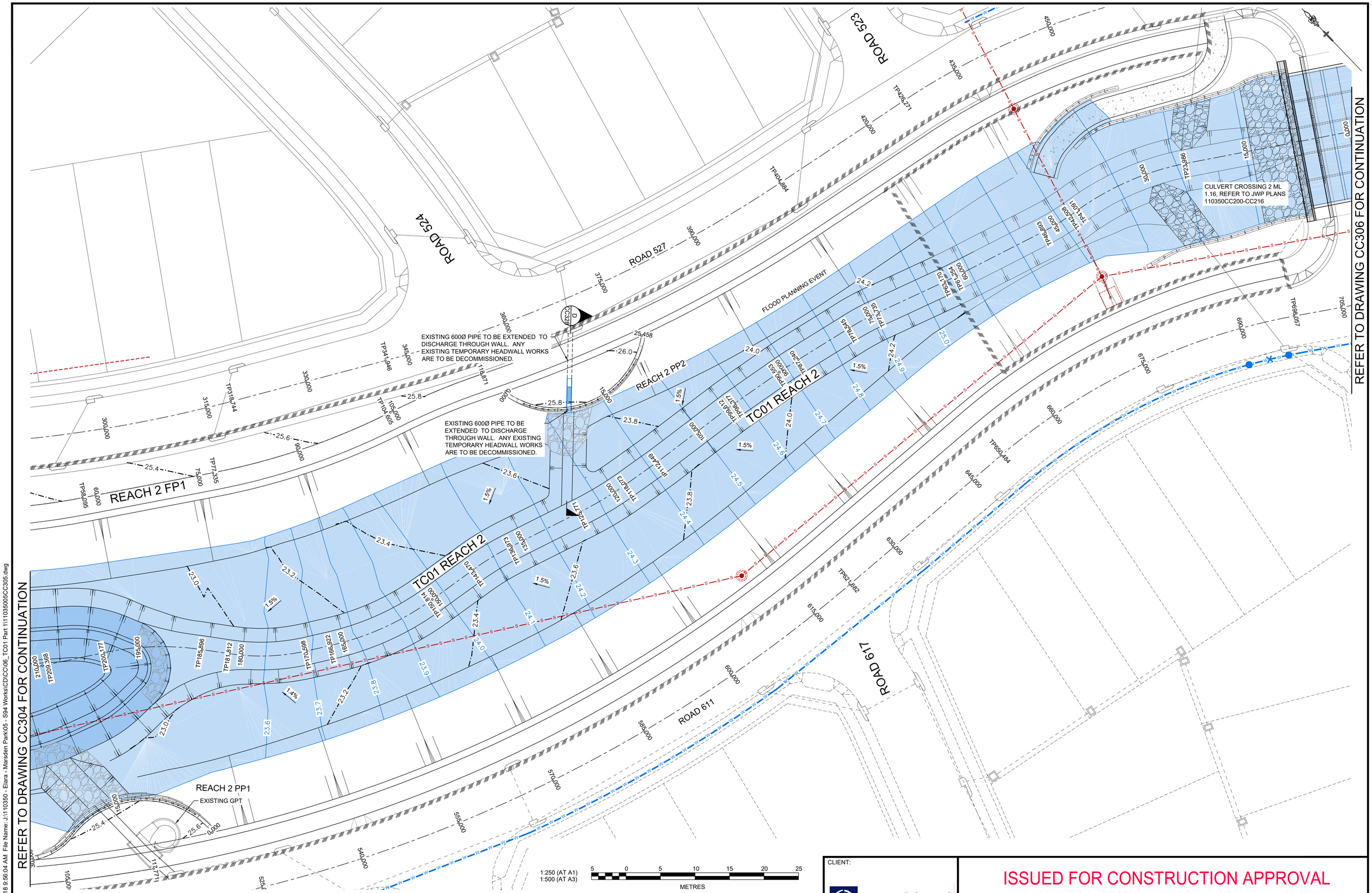

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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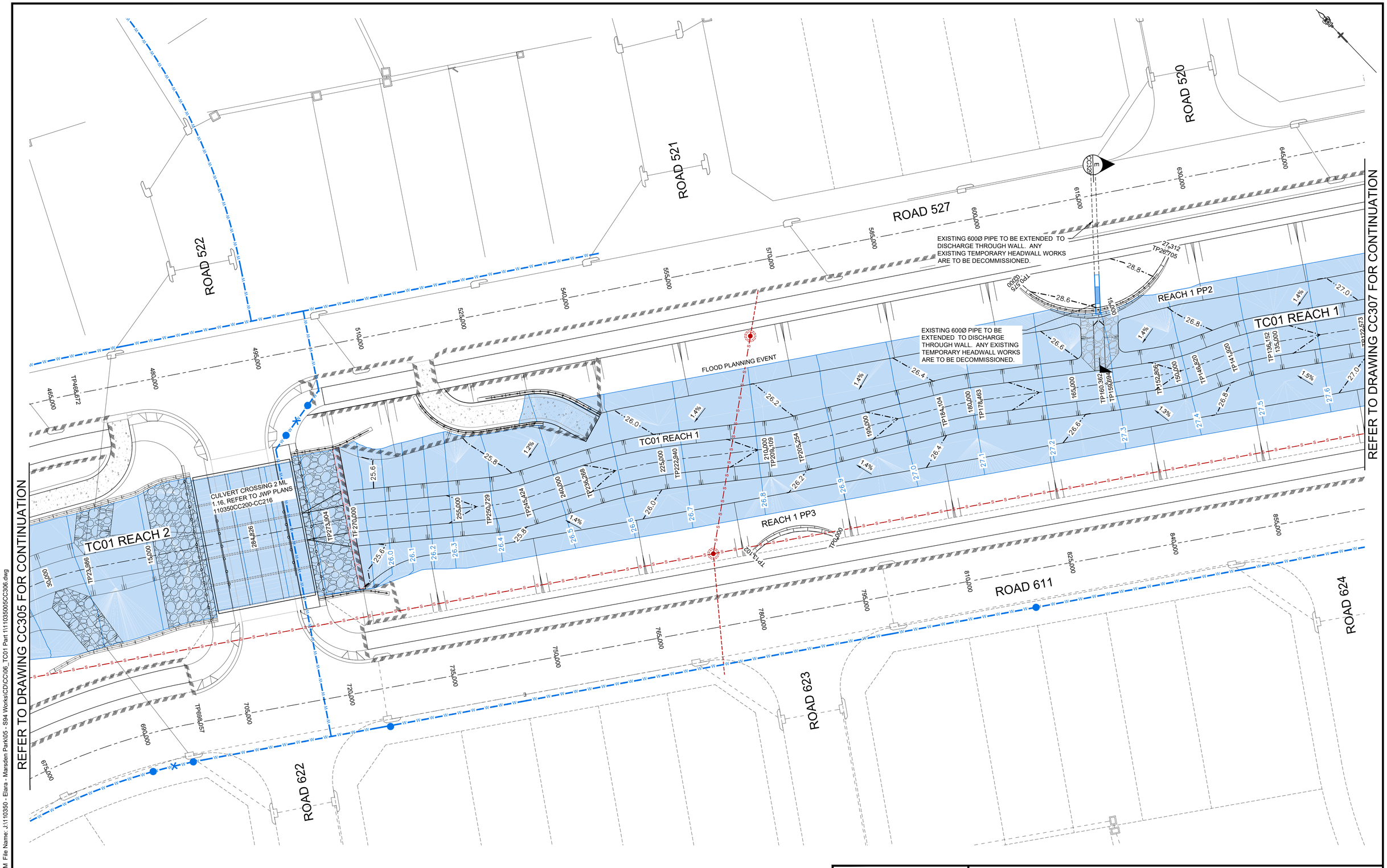
ELARA S94 WORKS
CHANNEL TC01 - PART 1
ENGINEERING PLAN
SHEET 2

PLAN No: 11035005/CC305 A
FILE No: 11035005CC305
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:56:04 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC305.dwg



1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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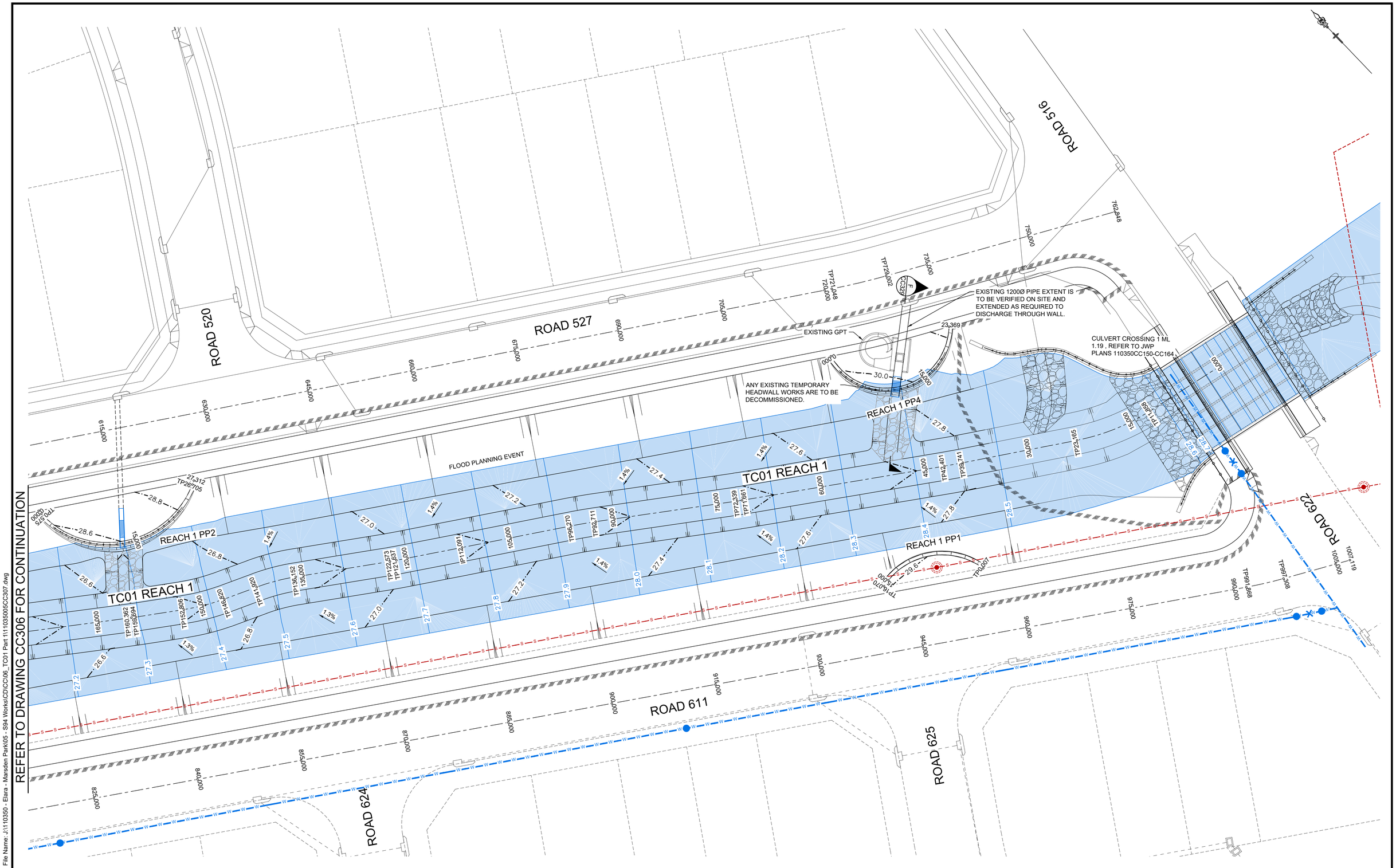
ELARA S94 WORKS
CHANNEL TC01 - PART 1
ENGINEERING PLAN
SHEET 3

PLAN No: 11035005/CC306 A
FILE No: 11035005CC306
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:56:28 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC306.dwg



A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 1
ENGINEERING PLAN
SHEET 4

PLAN No: 11035005/CC307 A
FILE No: 11035005CC307
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:56:52 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11103500 5CC307.dwg

REACH 1 PP1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297646.36	6268331.65	349°56'52.70"		
0.01	297646.36	6268331.65	349°56'52.70"		
8.04	297644.54	6268341.92		-9.9	16.06
16.07	297634.38	6268339.57	256°58'56.51"		
16.11	297634.34	6268339.56	256°58'56.50"		

REACH 1 PP2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297554.8	6268430.57	180°39'25.91"		
0.57	297554.8	6268429.99	180°39'25.91"		
13.64	297554.56	6268409.39		-12.93	26.13
26.7	297573.22	6268418.14	64°52'04.18"		
27.31	297573.77	6268418.4	64°52'04.18"		

REACH 1 PP3

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297500.42	6268427.72	85°39'56.23"		
0	297500.42	6268427.72			
6.55	297508.1	6268428.3		9.96	13.1
13.1	297510.59	6268421.02			
13.1	297510.59	6268421.02	161°03'12.58"		

REACH 1 PP4

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297651.57	6268368.46	194°08'31.60"		
5.84	297649.9	6268361.84		-9	11.68
11.68	297655.83	6268358.45	119°45'19.21"		
17.53	297661.76	6268355.06		-9	11.68
23.37	297666.62	6268359.86	45°22'06.82"		

REACH 2 PP1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297242.86	6268532.24	65°07'40.76"		
13.36	297262.52	6268541.35		12.93	26.72
26.72	297261.21	6268519.72	183°28'26.35"		
26.74	297261.21	6268519.7	183°28'26.35"		

REACH 3 PP2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297114.92	6268653.04	33°40'12.50"		
6.13	297118.97	6268659.11		-9	12.26
12.26	297113.87	6268664.32	315°38'03.61"		
18.39	297108.77	6268669.54		-9	12.26
24.52	297102.61	6268665.63	237°35'54.73"		

REACH 2 PP3

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297248.77	6268594.76	201°12'14.81"		
9.39	297243.18	6268580.34		-9	18.79
18.79	297258.47	6268582.6	81°36'01.41"		

REACH 2 PP4

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297161.34	6268671.98	184°49'42.36"		
14.32	297159.53	6268650.57		-14.8	28.64
28.64	297180.18	6268656.52	73°56'03.23"		

REACH 2 FP1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297240.52	6268608.9	133°51'28.49"		
2.03	297241.99	6268607.49	133°51'28.49"		
9.33	297247.25	6268602.43		100	14.58
16.62	297251.73	6268596.66	142°12'46.20"		
25.2	297256.99	6268589.87	142°12'46.20"		
41.65	297267.16	6268576.75		-97.5	32.89
58.09	297281.11	6268567.74	122°53'01.03"		
77.33	297297.26	6268557.29	122°53'01.03"		
90.97	297308.79	6268549.84		-98.35	27.27
104.6	297321.91	6268545.83			
104.6	297321.91	6268545.83			
111.74	297328.74	6268543.74		100	14.27
118.87	297335.21	6268540.7	115°10'18.40"		

REACH 2 FP2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297164.91	6268600.36	133°44'19.32"		
7.86	297170.63	6268594.89		-59	15.73
15.73	297177.58	6268591.12	118°27'47.51"		
30.74	297190.89	6268583.91		93.11	30.02
45.75	297201.23	6268572.84	136°56'16.77"		
48.8	297203.31	6268570.62		80	6.09
51.84	297205.22	6268568.24	141°18'03.51"		
68.46	297215.61	6268555.27		-2018.37	33.23
85.07	297226.21	6268542.48	140°21'27.74"		
89.31	297228.92	6268539.21		-50	8.47
93.54	297232.14	6268536.44	130°39'06.74"		
105.66	297241.34	6268528.54		-203.5	24.23
117.77	297251.41	6268521.79	123°49'49.28"		

REACH 3 FP1

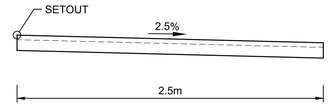
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297039.34	6268802.52	147°14'19.18"		
1.51	297040.16	6268801.26	147°14'19.18"		
30.07	297055.78	6268776.99		-161.5	57.12
58.63	297078.84	6268759.63	126°58'28.83"		
59.15	297079.25	6268759.31	126°58'28.83"		
63.45	297082.69	6268756.72		-60	8.61
67.75	297086.47	6268754.65	118°45'16.95"		
68.89	297087.47	6268754.1	118°45'16.95"		
89.99	297106.27	6268743.78		95	42.18
111.08	297118.82	6268726.39	144°11'45.60"		
112.49	297119.65	6268725.24	144°11'45.60"		
116.83	297122.18	6268721.73		118	8.67
121.16	297124.46	6268718.03	148°24'19.18"		
138.47	297133.52	6268703.29	148°24'19.18"		
150.1	297139.68	6268693.28		-65	23.27
161.73	297148.96	6268686.05	127°53'42.84"		
186.78	297168.73	6268670.67	127°53'42.84"		
199.37	297178.67	6268662.93		252.5	25.18
211.96	297187.79	6268654.24	133°36'31.80"		
224.2	297196.66	6268645.8	133°36'31.80"		
235.63	297204.94	6268637.9		-197.5	22.86
247.06	297214.09	6268631.02	126°58'35.46"		
260.8	297225.06	6268622.76	126°58'35.46"		
266.8	297229.86	6268619.14		100	12.01
272.81	297234.2	6268614.98	133°51'28.49"		
280.17	297239.5	6268609.88	133°51'28.49"		

TC01 REACH 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297690.69	6268329.12	281°02'05.02"		
11.86	297679.06	6268331.39	281°02'05.02"		
17.51	297673.44	6268332.49		30	11.31
23.16	297668.62	6268335.57	302°37'44.60"		
39.74	297654.66	6268344.51	302°37'44.60"		
41.07	297653.54	6268345.23		100	2.66
42.4	297652.44	6268345.97	304°09'10.16"		
71.66	297628.23	6268362.4	304°09'10.16"		
72	297627.95	6268362.59		30	0.68
72.34	297627.67	6268362.79	305°26'49.77"		
92.71	297611.07	6268374.6	305°26'49.77"		
94.49	297609.62	6268375.63		-70	3.56
96.27	297608.12	6268376.59	302°32'02.99"		
112.09	297594.79	6268385.1			
121.64	297586.75	6268390.26	302°41'32.76"		
122.11	297586.36	6268390.51		30	0.94
122.57	297585.97	6268390.77	304°28'52.36"		
136.15	297574.78	6268398.46	304°28'52.36"		
139.04	297572.39	6268400.1		-30	5.77
141.92	297569.74	6268401.25	293°27'50.05"		
146.82	297565.25	6268403.2	293°27'50.05"		
149.81	297562.49	6268404.4		30	5.99
152.81	297560.03	6268406.12	304°53'49.31"		
159.69	297554.38	6268410.06	304°53'49.31"		
160.03	297554.1	6268410.25		30	0.67
160.36	297553.83	6268410.44	306°10'19.62"		
178.46	297539.22	6268421.13	306°10'19.62"		
181.28	297536.94	6268422.79		-50	5.64
184.1	297534.49	6268424.19	299°42'28.95"		
205.25	297516.12	6268434.67	299°42'28.95"		
207.18	297514.44	6268435.63		30	3.86
209.11	297512.9	6268436.79	307°04'17.16"		
222.94	297501.87	6268445.13	307°04'17.16"		
229.6	297496.54	6268449.16		-70	13.33
236.27	297490.54	6268452.11	296°09'45.90"		
245.42	297482.32	6268456.15	296°09'45.90"		
248.08	297479.93	6268457.32		25	5.3
250.73	297477.84	6268458.97	308°19'12.76"		
270.07	297462.67	6268470.96	308°19'12.76"		
271.98	297461.16	6268472.15		-40	3.84
273.9	297459.55	6268473.19	302°49'23.69"		
284.83	297450.37	6268479.11	302°49'23.69"		

TC01 REACH 2

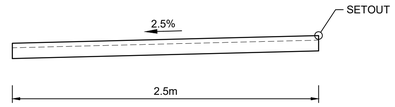
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	297450.37	6268479.11	302°49'23.69"		
23.99	297430.21	6268492.11	302°49'23.69"		
32.54	297422.91	6268496.82		-40	17.11
41.09	297414.32	6268498.08	278°19'17.92"		
42.51	297412.92	6268498.28	278°19'17.92"		
44.7	297410.75	6268498.6		30	4.39
46.89	297408.64	6268499.23	286°41'49.23"		
61.25	297394.89	6268503.36	286°41'49.23"		
62.21	297393.97	6268503.63		50	1.92
63.17	297393.06	6268503.94	288°53'32.07"		
73.73	297383.07	6268507.37	288°53'32.07"		
76.14	297380.79	6268508.14		-40	4.81
78.54	297378.43	6268508.65	282°00'08.11"		
87.24	297369.93	6268510.45	282°00'08.11"		
88.9	297368.31	6268510.8		-60	3.31
90.55	297366.67	6268511.05	278°50'20.07"		
98.38	297358.94	6268512.25	278°50'20.07"		
98.99	297358.33	6268512.35		-30	1.23
99.61	297357.72	6268512.42	276°28'50.17"		
112.45	297344.96	6268513.87			
118.07	297339.39	6268514.67	278°14'19.51"		
121.92	297335.58	6268515.23		50	7.7
125.77	297331.89	6268516.36	287°03'34.82"		
136.97	297321.18	6268519.64	287°03'34.82"		
140.22	297318.07	6268520.6		-40	6.5
143.47	297314.84	6268521.04	277°45'12.75"		
150.81	297307.57	6268522.03	277°45'12.75"		
158.87	297299.48	6268523.13		40	16.11
166.92	297292.46	6268527.32	300°49'36.03"		
170.6	297289.31	6268529.2	300°49'36.03"		
176.2	297284.44	6268532.11		30	11.21
181.81	297280.96	6268536.59	322°14'38.60"		
185.9	297278.46	6268539.82	322°14'38.60"		
193.04	297274.04	6268545.53		-40	14.28
200.18	297267.91	6268549.33	301°47'17.55"		
209.37	297260.1	6268554.17	301°47'17.55"		
211.45	297258.32	6268555.27		40	4.17
213.53	297256.68	6268556.54	307°45'16.20"		
236.34	297238.64	6268570.51	307°45'16.20"		
244.74	297231.9	6268575.73		40	16.8
253.14	297227.87	6268583.25	331°49'10.27"		
256.82	297226.14	6268586.48	331°49'10.27"		
262.38	297223.5	6268591.42		-40	11.12
267.94	297219.6	6268595.44	315°53'08.00"		
268.65	297219.11	6268595.95	315°53'08.00"		
279.3	297211.57	6268603.71		-50	21.31
289.96	297201.5	6268607.67	291°27'48.04"		
290.93	297200.6	6268608.03	291°27'48.04"		
308.36	297184.04	6268614.54		70	34.85
325.78	297172.6	6268628.17	319°59'13.65"		
331.31	297169.04	6268632.4	319°59'13.65"		
333.86	297167.4	6268634.36		-50	5.1
336.42	297165.57	6268636.14	314°08'23.07"		
352.13	297154.29	6268647.09	314°08'23.07"		
353.46	297153.34	6268648.01		-100	2.65
354.78	297152.36	6268648.91	312°37'18.54"		
365.93	297144.16	6268656.45	312°37'18.54"		



REACH 2 FP1 AND REACH 3 FP1

(SHARED PATH)

SCALE 1:25



REACH 2 FP2

CH: 90 TO END

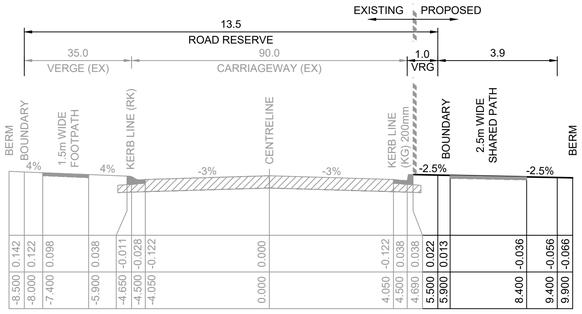
(SHARED PATH)

SCALE 1:25

ELEMENT	DESCRIPTION	PAVEMENT
REACH 2 FP1, REACH 2 FP2 AND REACH 3 FP1	SHARED PATH 2.5m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER

NOTE:

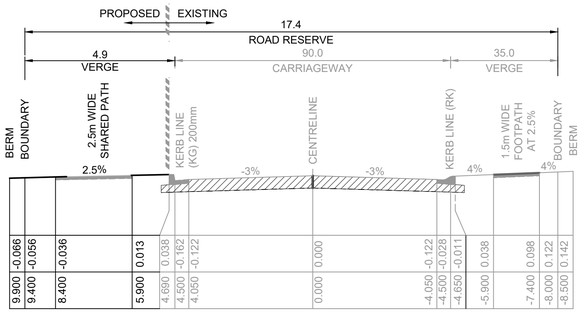
ALL PATHS ARE TO BE CONSTRUCTED TO BLACKTOWN CITY COUNCILS 'PATH PAVING POLICY 2009'



TYPICAL CROSS SECTION - PERIMETER ROAD

ROAD 527

1:100 NATURAL



TYPICAL CROSS SECTION - PERIMETER ROAD

ROAD 611

1:100 NATURAL

1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:25(AT A1) 500 0 500 1000 1500 2000 2500 MILLIMETRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750

P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:

DATUM:

ORIGIN:

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS

CHANNEL TC01 - PART 1

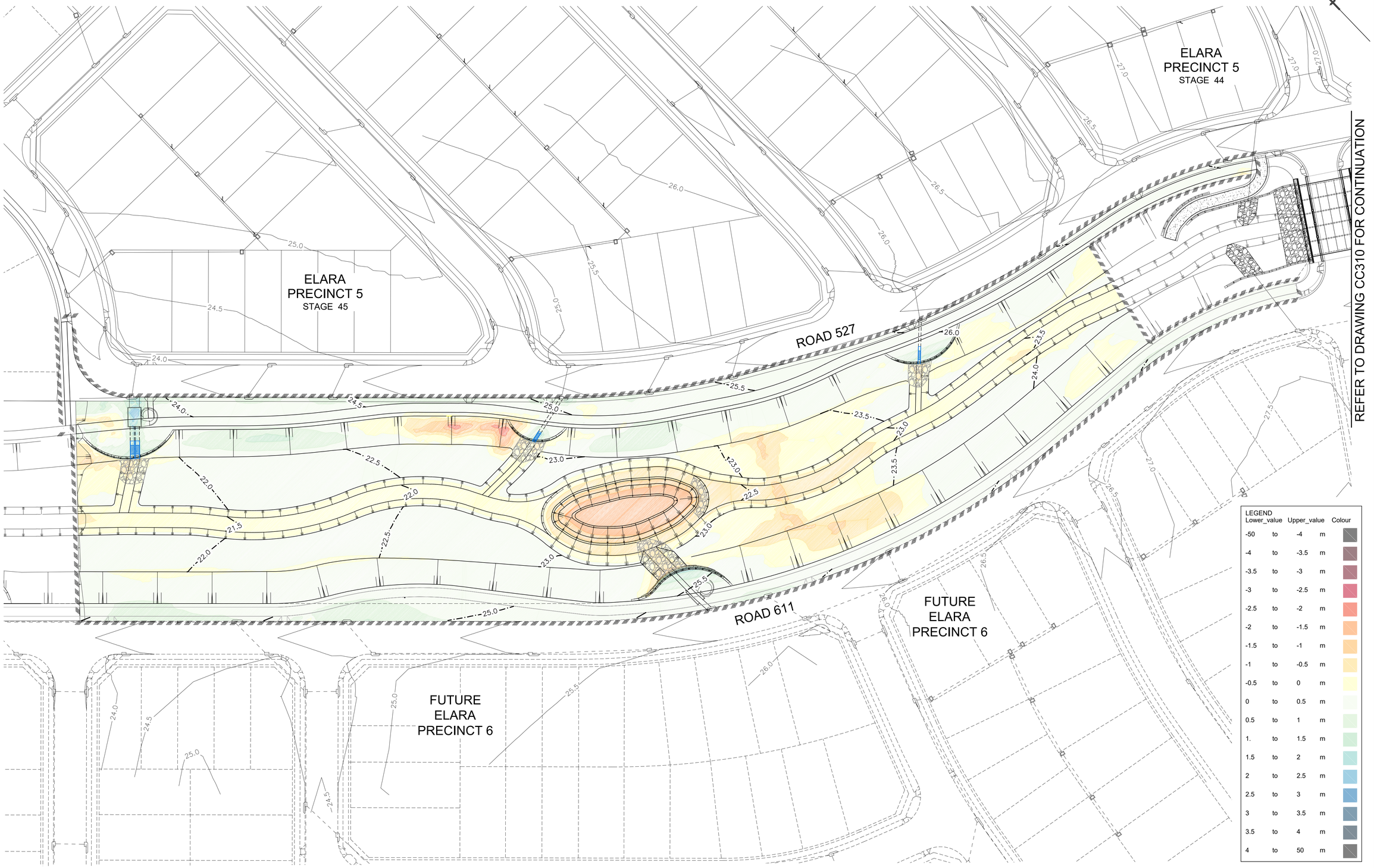
SETOUT TABLES AND FOOTPATH DETAILS

PLAN No: 11035005/CC308 A

FILE No: 11035005CC308

SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:57:00 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC308.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT:

Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

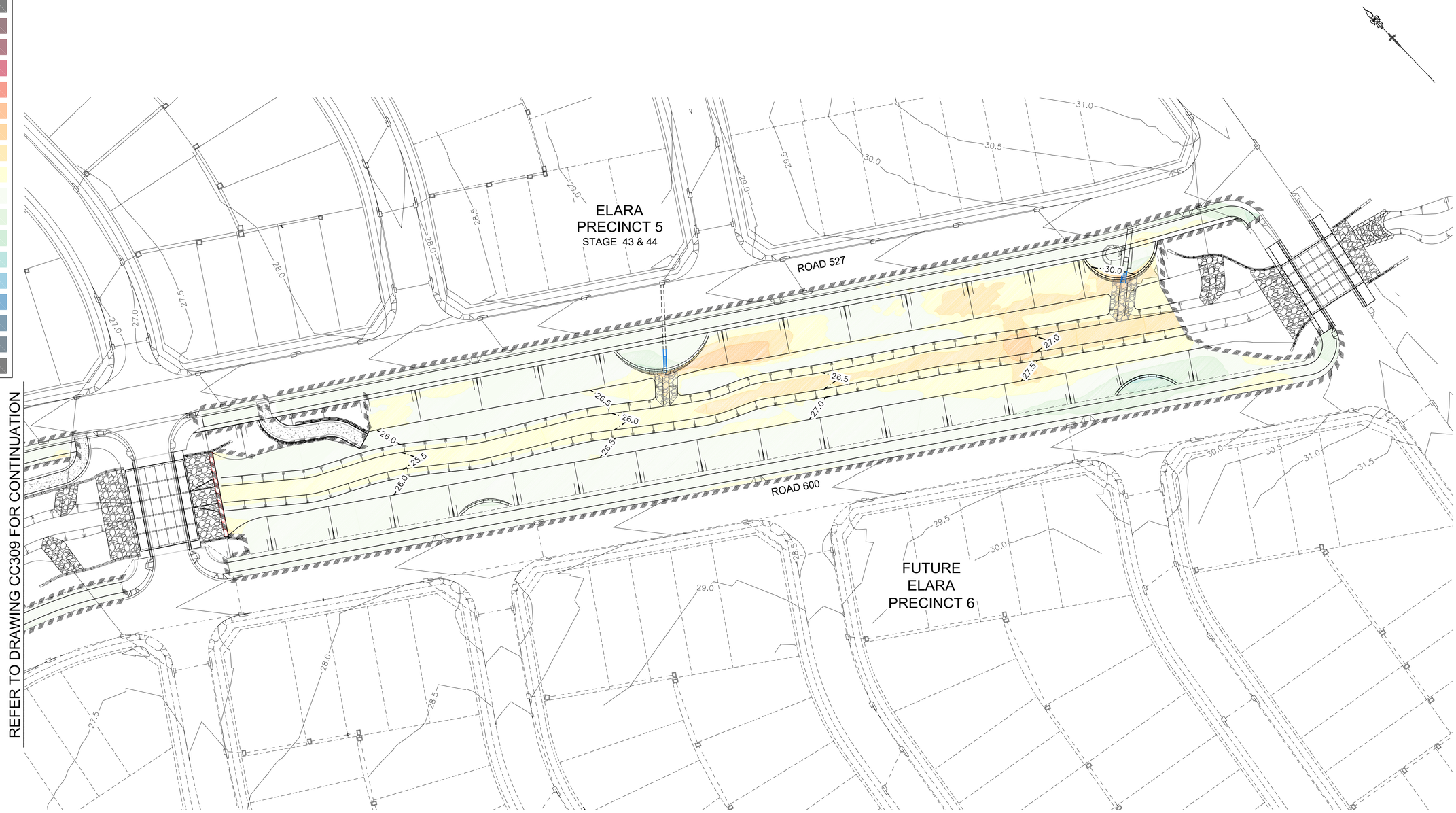
AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
CHANNEL TC01 - PART 1
CUT / FILL PLAN
SHEET 1

PLAN No: 11035005/CC309 A
FILE No: 11035005CC309
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:57:23 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC309.dwg

LEGEND Lower_value		Upper_value		Colour
-50	to	-4	m	
-4	to	-3.5	m	
-3.5	to	-3	m	
-3	to	-2.5	m	
-2.5	to	-2	m	
-2	to	-1.5	m	
-1.5	to	-1	m	
-1	to	-0.5	m	
-0.5	to	0	m	
0	to	0.5	m	
0.5	to	1	m	
1.	to	1.5	m	
1.5	to	2	m	
2	to	2.5	m	
2.5	to	3	m	
3	to	3.5	m	
3.5	to	4	m	
4	to	50	m	



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

ISSUED FOR CONSTRUCTION APPROVAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

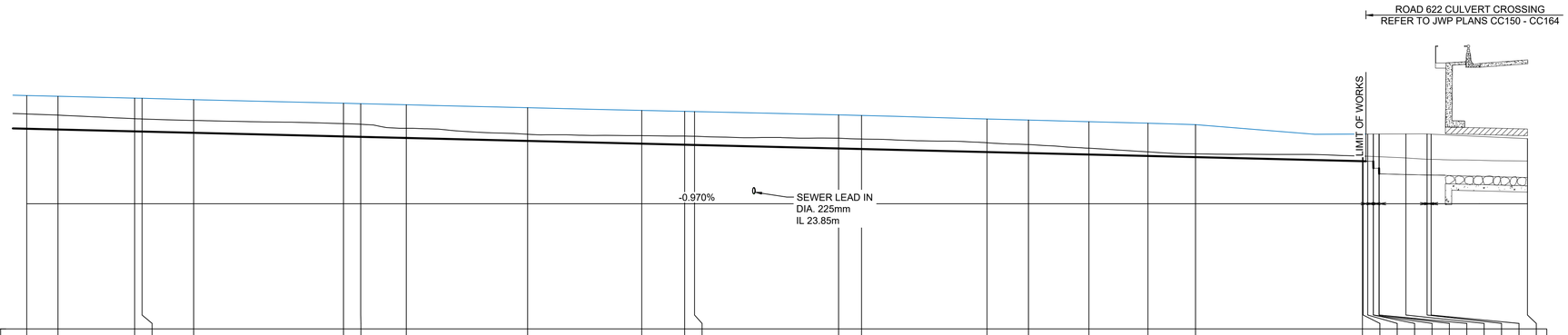
J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
CHANNEL TC01 - PART 1
CUT / FILL PLAN
SHEET 2

PLAN No: 11035005/CC310 A
FILE No: 11035005CC310
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:57:44 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC310.dwg



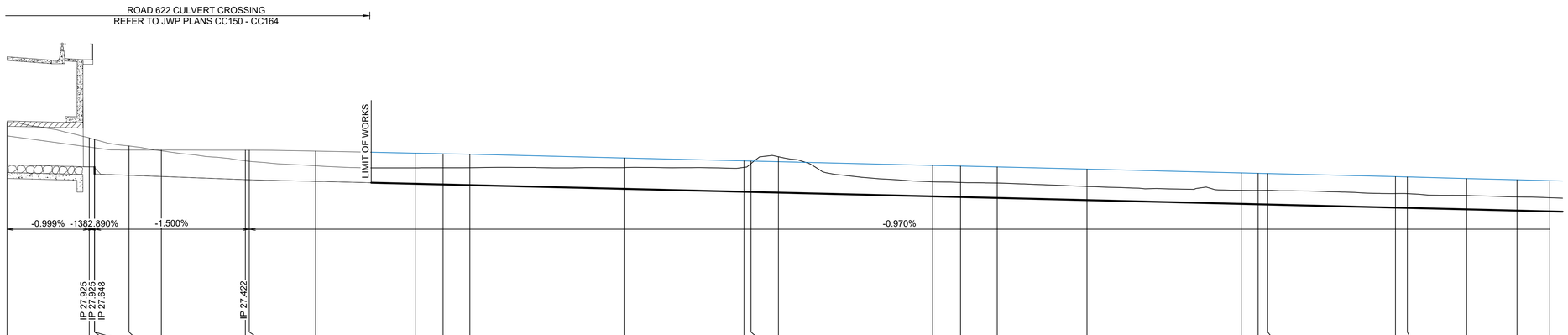
DATUM 19.0

WAE																																		
DESIGN LINE GRADING	26.196	26.168		26.102	26.095	26.050		25.920	25.905	25.865		25.759		25.660	25.622	25.614		25.488	25.468		25.359	25.323		25.270		25.219	25.177		25.032	25.031	25.027	24.777	24.777	24.573
FLOOD PLANNING LEVEL	27.389	27.362		27.296	27.290	27.242		27.113	27.098	27.057		26.954		26.856	26.821	26.813		26.693	26.673		26.546	26.507		26.451		26.396	26.345		26.003	26.003	26.003	26.004	26.005	26.005
EXISTING SURFACE	26.727	26.686		26.556	26.547	26.495		26.379	26.357	26.212		25.997		25.948	25.932	25.925		25.856	25.827		25.691	25.626		25.497		25.365	25.293		25.213	25.213	25.206	25.197	25.189	25.189
CHAINAGE	150.000	152.806		159.694	160.362	165.000		178.463	180.000	184.104		195.000		205.254	209.109	210.000		222.940	225.000		236.268	240.000		245.424		250.729	255.000		270.000	270.066	270.476	270.978	270.988	271.489

WAE																																		
DESIGN LINE GRADING	24.549	24.530	24.530	24.444																														
FLOOD PLANNING LEVEL	26.010	26.007	26.000	25.839																														
EXISTING SURFACE	25.145	25.099	25.095	25.034																														
CHAINAGE	271.499	273.904	275.806	276.176	284.826																													

LONGITUDINAL SECTION TC01 REACH 1

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 21.0

WAE																																		
DESIGN LINE GRADING	28.004		27.925	27.925	27.648	27.597	27.550		27.428	27.422	27.359		27.265	27.239	27.214		27.069		26.955	26.949	26.923		26.778	26.751	26.717		26.632		26.487	26.471	26.462		26.341	26.330
FLOOD PLANNING LEVEL	29.128		28.697	28.670	28.669	28.580	28.578		28.573	28.573	28.536		28.458	28.436	28.416		28.270		28.158	28.151	28.126		27.980	27.955	27.921		27.837		27.690	27.674	27.665		27.545	27.533
EXISTING SURFACE	29.653		29.051	28.988	28.985	28.739	28.551		28.160	28.142	27.968		27.886	27.888	27.891		27.896		27.904	28.052	28.320		27.343	27.317	27.296		27.164		27.012	27.010	27.013		26.885	26.885
CHAINAGE	0.000		7.994	8.494	8.514	11.858	15.000		23.165	23.550	30.000		39.741	42.401	45.000		60.000		71.661	72.339	75.000		90.000	92.711	96.270		105.000		120.000	121.637	122.573		135.000	136.152

WAE																																		
DESIGN LINE GRADING		26.274		26.226	26.196																													
FLOOD PLANNING LEVEL		27.471		27.421	27.389																													
EXISTING SURFACE		26.814		26.757	26.727																													
CHAINAGE		141.920		146.820	150.000																													

LONGITUDINAL SECTION TC01 REACH 1

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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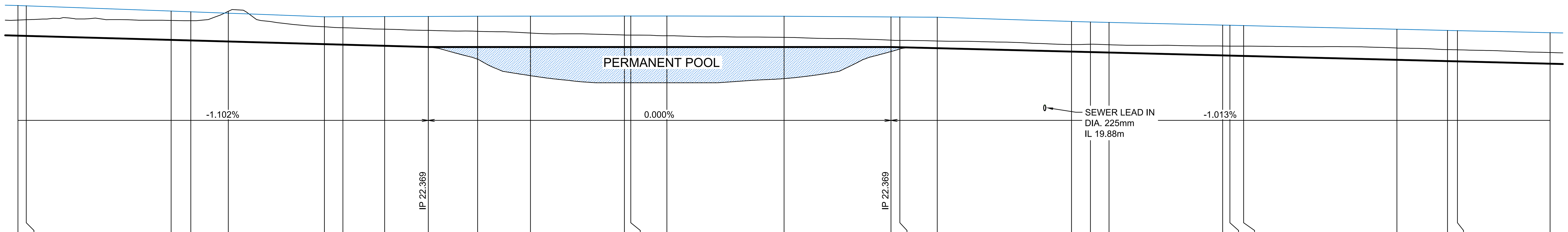
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 1
CHANNEL LONGITUDINAL SECTIONS
SHEET 1

PLAN No: 11035005/CC311 A
FILE No: 11035005CC311
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:57:57 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC311.dwg

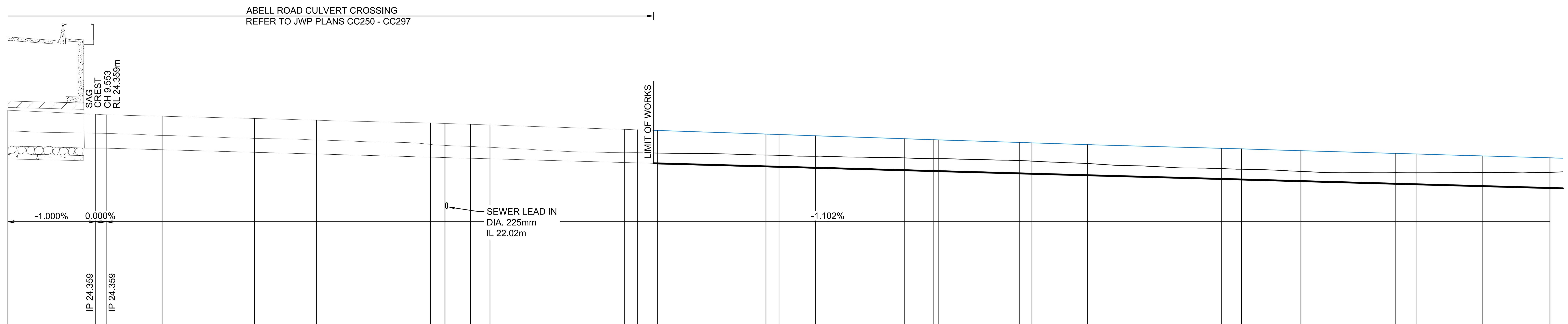


DATUM 15.0

CHAINAGE	WAE	DESIGN LINE GRADING	FLOOD PLANNING LEVEL	EXISTING SURFACE
150.000		22.811	23.988	23.420
150.814		22.802	23.976	23.433
165.000		22.646	23.772	23.406
166.922		22.625	23.742	23.396
170.598		22.584	23.689	23.763
180.000		22.481	23.550	23.159
181.812		22.461	23.552	23.122
185.896		22.416	23.558	23.064
190.172		22.369	23.563	23.018
195.000		22.369	23.569	22.981
200.177		22.369	23.573	22.915
209.368		22.369	23.580	22.836
210.000		22.369	23.580	22.835
213.533		22.369	23.578	22.806
225.000		22.369	23.570	22.745
235.472		22.369	23.544	22.633
236.344		22.360	23.542	22.627
240.000		22.323	23.532	22.602
253.145		22.190	23.367	22.464
255.000		22.171	23.346	22.477
256.815		22.153	23.328	22.455
267.939		22.040	23.224	22.407
268.649		22.033	23.217	22.402
270.000		22.019	23.204	22.403
285.000		21.867	23.063	22.328
289.961		21.817	23.017	22.268
290.932		21.807	23.009	22.259
300.000		21.715	22.925	22.152

LONGITUDINAL SECTION TC01 REACH 2

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 17.0

CHAINAGE	WAE	DESIGN LINE GRADING	FLOOD PLANNING LEVEL	EXISTING SURFACE
0.000		24.444	25.839	25.034
8.501		24.359	25.680	24.943
9.553		24.359	25.660	24.935
15.000		24.299	25.603	24.853
23.986		24.200	25.517	24.742
30.000		24.133	25.446	24.676
41.091		24.011	25.340	24.506
42.508		23.996	25.322	24.467
45.000		23.968	25.290	24.427
46.893		23.947	25.265	24.394
60.000		23.803	25.091	24.185
61.254		23.789	25.075	24.188
63.170		23.768	25.049	24.171
73.735		23.652	24.909	24.095
75.000		23.638	24.893	24.081
78.545		23.599	24.845	24.045
87.240		23.503	24.727	23.982
90.000		23.472	24.690	23.954
90.553		23.466	24.683	23.953
98.377		23.380	24.583	23.881
99.612		23.367	24.567	23.857
105.000		23.307	24.499	23.763
118.073		23.163	24.354	23.568
120.000		23.142	24.333	23.541
125.771		23.078	24.264	23.456
135.000		22.977	24.158	23.409
136.973		22.955	24.135	23.403
143.470		22.883	24.059	23.415
150.000		22.811	23.988	23.420

LONGITUDINAL SECTION TC01 REACH 2

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1) 1:200 (AT A3) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:250 (AT A1) 1:500 (AT A3) — 5 0 5 10 15 20 25 METRES

Plotted: 2 November , 2018 9:58:08 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC312.dwg

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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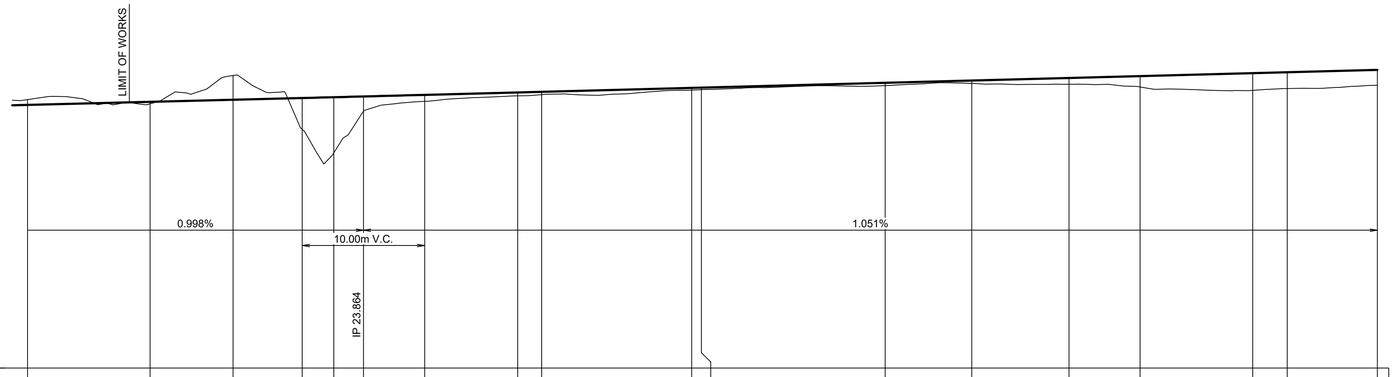
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 1
CHANNEL LONGITUDINAL SECTIONS
SHEET 2

PLAN No: 11035005/CC312 A
FILE No: 11035005CC312
SHEET SIZE: A1 ORIGINAL

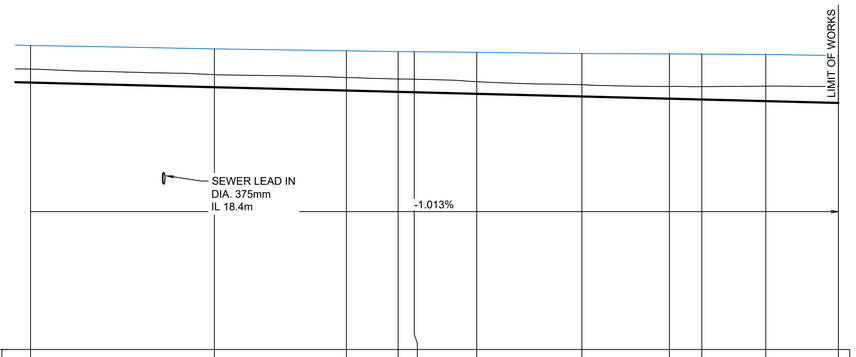


DATUM 15.0

WAE																								
DESIGN LINE GRADING	23.590	23.690	23.758	23.814	23.840	23.864	23.916	23.996	24.017	24.145	24.154	24.312	24.386	24.469	24.530	24.627	24.657	24.734
EXISTING SURFACE	23.759	23.624	24.548	22.798	22.002	23.393	23.706	23.885	23.925	24.073	24.084	24.219	24.291	24.263	24.175	24.063	24.125	24.234
CHAINAGE	170.000	180.000	186.778	192.416	195.000	197.416	202.416	210.000	211.957	224.201	225.000	240.000	247.063	255.000	260.798	270.000	272.809	280.166

LONGITUDINAL SECTION REACH 3 FP1

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 13.0

WAE												
DESIGN LINE GRADING	21.715	21.563	21.454	21.411	21.398	21.346	21.259	21.187	21.160	21.107	21.047
FLOOD PLANNING LEVEL	22.925	22.813	22.751	22.727	22.722	22.700	22.663	22.648	22.643	22.632	22.592
EXISTING SURFACE	22.152	21.970	21.878	21.832	21.824	21.744	21.642	21.588	21.581	21.596	21.583
CHAINAGE	300.000	315.000	325.780	330.000	331.313	336.415	345.000	352.135	354.784	360.000	365.927

LONGITUDINAL SECTION TC01 REACH 2

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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CLIENT: Stockland

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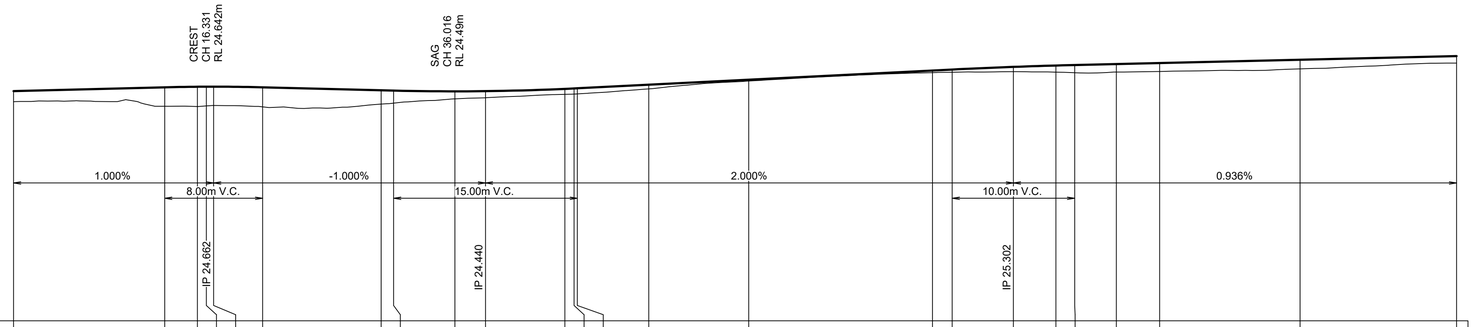
ELARA S94 WORKS
CHANNEL TC01 - PART 1
CHANNEL AND FOOTPATH LONGITUDINAL SECTIONS
SHEET 3

PLAN No: 11035005/CC313 A
FILE No: 11035005CC313
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:58:18 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC313.dwg

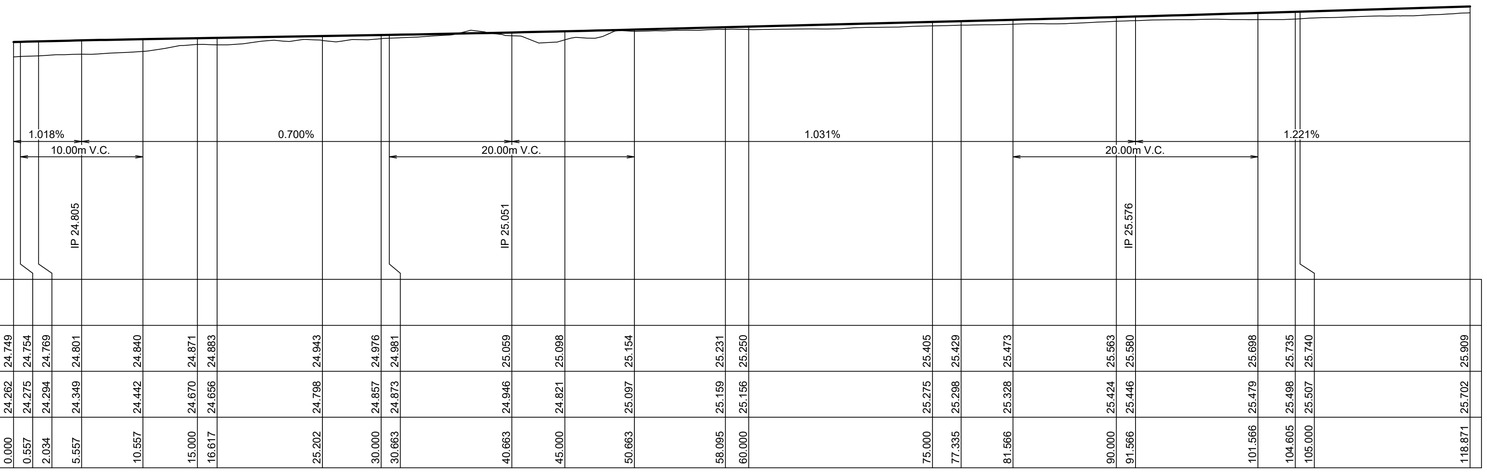


DATUM 17.0

WAE																												
DESIGN LINE GRADING	24.499	24.622	24.640	24.642	24.642	24.622	24.525	24.515	24.490	24.497	24.571	24.585	24.590	24.707	24.870	25.170	25.202	25.289	25.333	25.349	25.381	25.414	25.521	25.641
EXISTING SURFACE	24.152	23.992	23.994	24.014	24.031	23.985	24.074	24.106	24.247	24.282	24.392	24.401	24.407	24.570	24.828	25.102	25.112	25.134	25.118	25.095	25.119	25.137	25.216	25.411
CHAINAGE	0.000	12.331	15.000	15.730	16.331	20.331	30.000	31.016	36.016	38.516	45.000	45.752	46.016	51.844	60.000	75.000	76.607	81.607	85.072	86.607	90.000	93.542	105.000	117.771

LONGITUDINAL SECTION REACH 2 FP2

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 17.0

WAE																												
DESIGN LINE GRADING	24.749	24.754	24.769	24.801	24.840	24.871	24.883	24.943	24.976	24.981	25.059	25.098	25.154	25.231	25.250	25.405	25.429	25.473	25.563	25.580	25.698	25.735	25.740	25.909
EXISTING SURFACE	24.262	24.275	24.294	24.349	24.442	24.670	24.656	24.798	24.857	24.873	24.946	24.821	25.097	25.159	25.156	25.275	25.298	25.328	25.424	25.446	25.479	25.498	25.507	25.702
CHAINAGE	0.000	0.557	2.034	5.557	10.557	15.000	16.617	25.202	30.000	30.663	40.663	45.000	50.663	58.095	60.000	75.000	77.335	81.566	90.000	91.566	101.566	104.605	105.000	118.871

LONGITUDINAL SECTION REACH 2 FP1

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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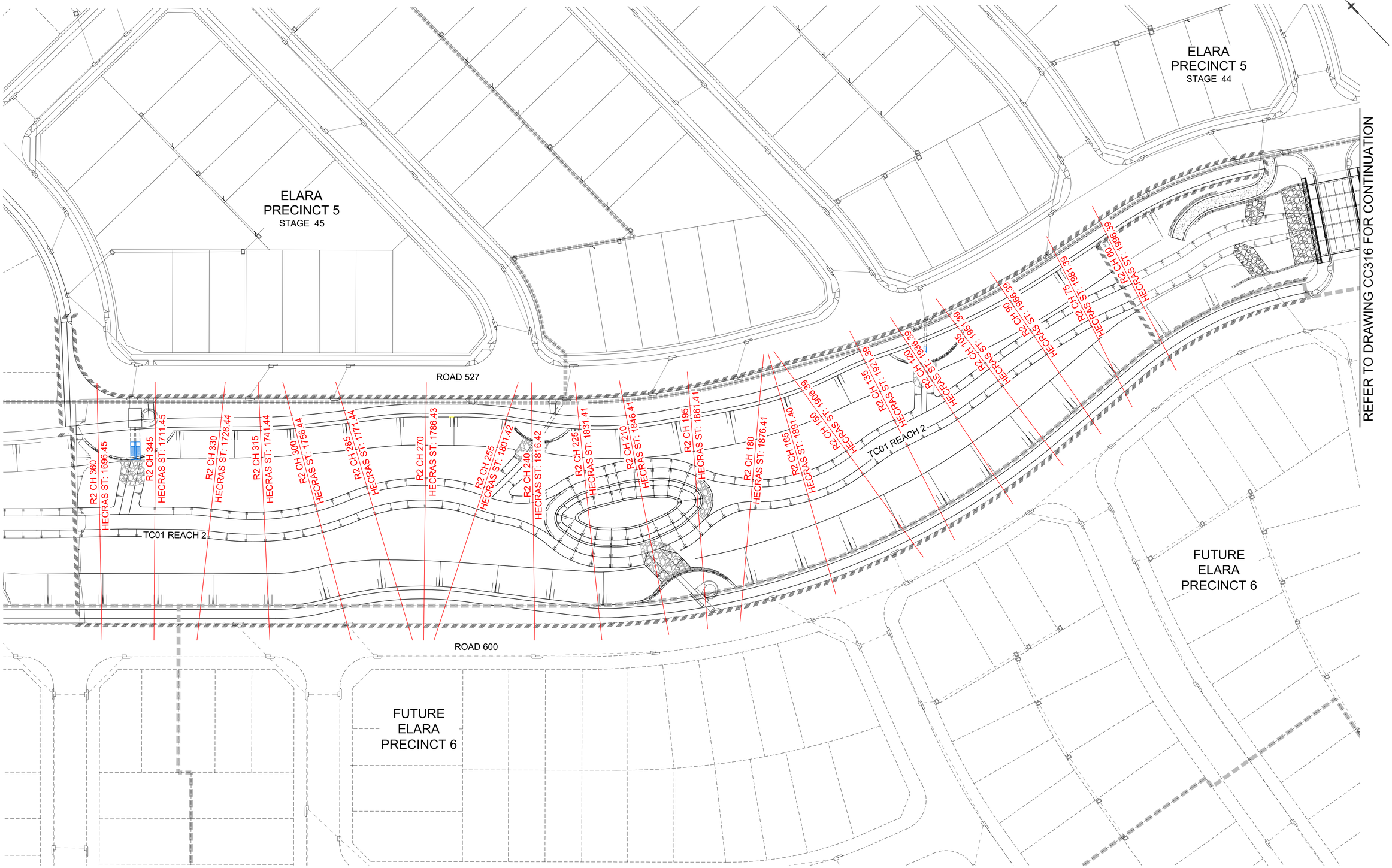
ELARA S94 WORKS
CHANNEL TC01 - PART 1
FOOTPATH LONGITUDINAL SECTIONS

PLAN No: 11035005/CC314 A
FILE No: 11035005CC314
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 9:58:29 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC314.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS PLAN
SHEET 1

PLAN No: 11035005/CC315 A

FILE No: 11035005CC315

SHEET SIZE: A1 ORIGINAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
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PO Box 4366 PENRITH WESTFIELD NSW 2750
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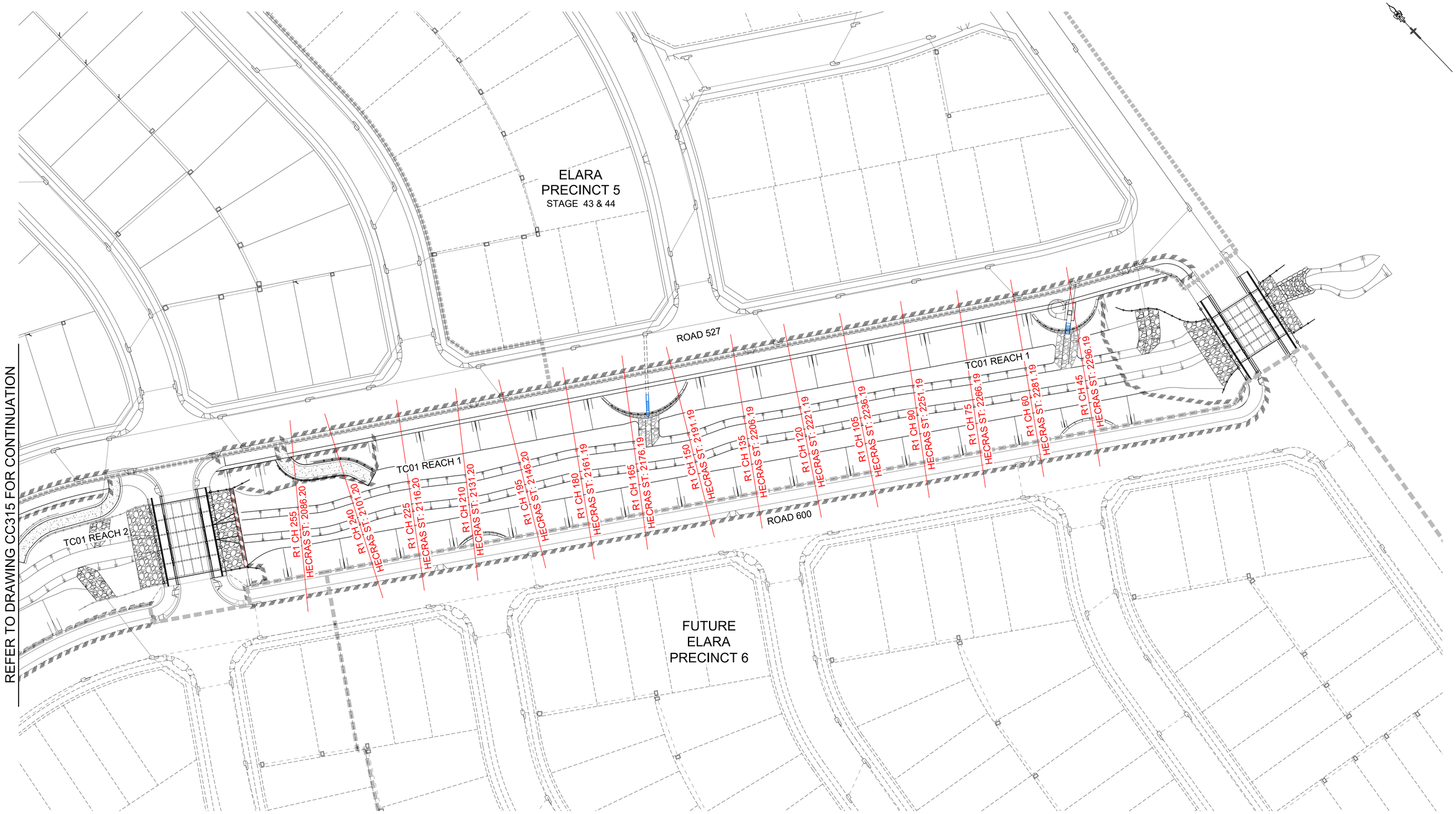
AZIMUTH:
DATUM:
ORIGIN:

Plotted: 2 November , 2018 9:58:48 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC315.dwg



REFER TO DRAWING CC315 FOR CONTINUATION

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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ORIGIN:

CLIENT: Stockland

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ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS PLAN
SHEET 2

PLAN No: 11035005/CC316 A
FILE No: 11035005CC316
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:59:06 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC316.dwg

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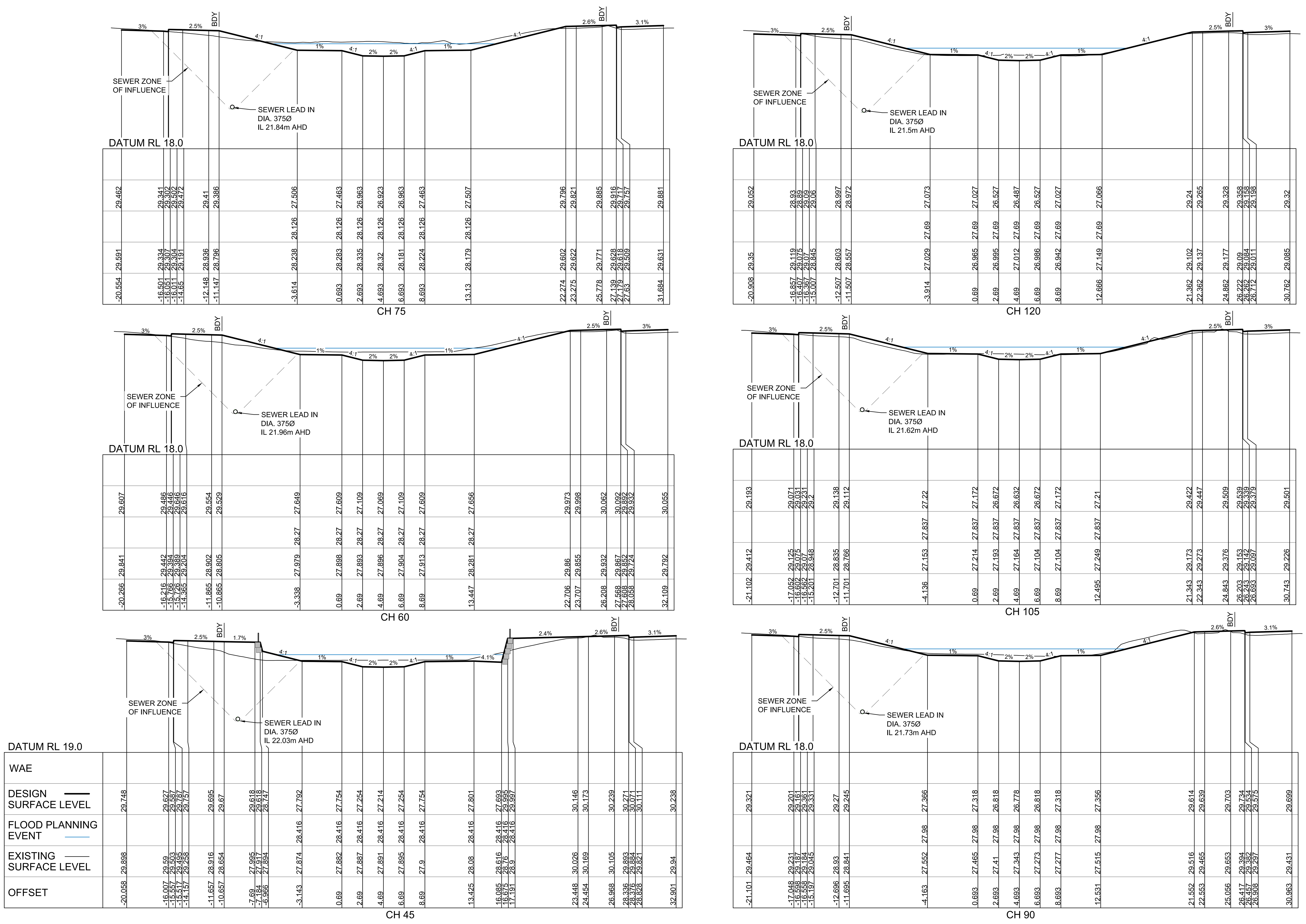

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

CLIENT: Stockland

ISSUED FOR CONSTRUCTION APPROVAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS
SHEET 1

PLAN No: 11035005/CC317 A
FILE No: 11035005CC317
SHEET SIZE: A1 ORIGINAL

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

CLIENT: Stockland

ISSUED FOR CONSTRUCTION APPROVAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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DATUM:
ORIGIN:

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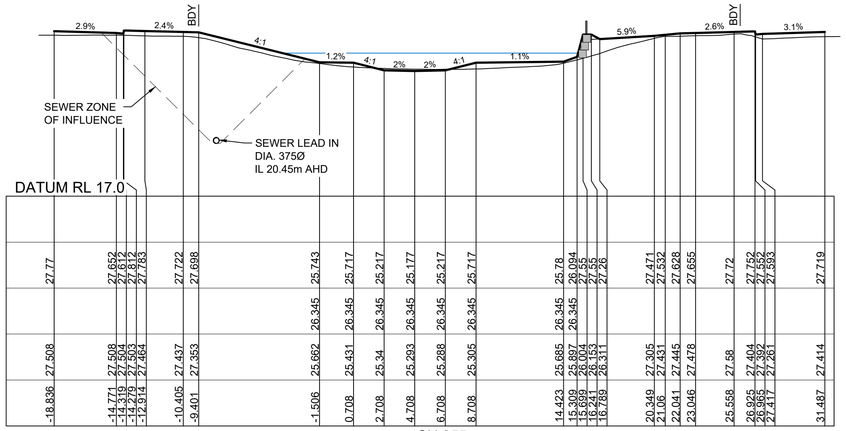
ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS
SHEET 2

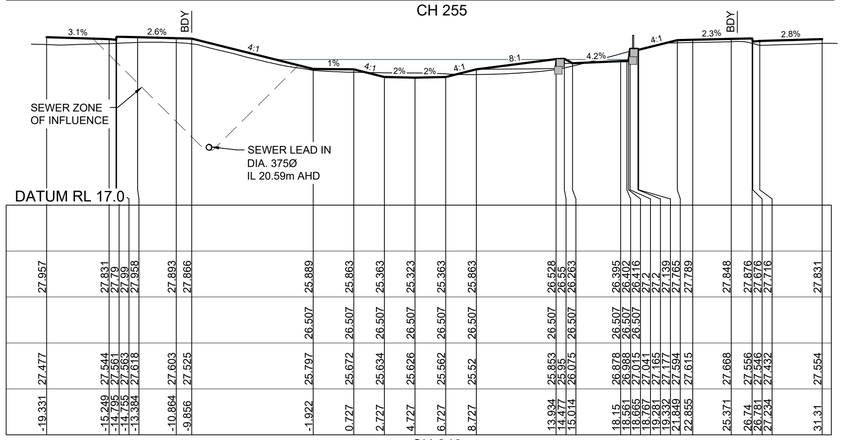
PLAN No: 11035005/CC318 A
FILE No: 11035005CC318
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:59:25 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC318.dwg



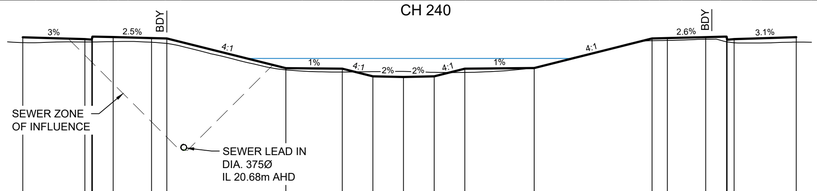
27.77	27.552	27.612	27.641	27.693	27.722	27.698	25.743	25.717	25.217	25.177	25.217	25.717	25.78	26.094	27.55	27.585	27.26	27.471	27.552	27.628	27.655	27.72	27.752	27.752	27.593	27.719
							26.345	26.345	26.345	26.345	26.345	26.345	26.345	26.345													
27.508	27.508	27.504	27.503	27.484	27.437	27.353	25.662	25.431	25.34	25.293	25.288	25.305	25.685	25.897	26.094	26.133	26.311	27.305	27.431	27.445	27.478	27.58	27.404	27.392	27.261	27.414
-18.836	-14.771	-14.319	-14.129	-12.914	-10.405	-9.401	-1.506	0.708	2.708	4.708	6.708	8.708	14.423	15.309	15.699	16.141	16.789	20.349	21.06	22.041	23.046	25.558	26.925	26.985	27.417	31.487

CH 255



27.957	27.831	27.79	27.799	27.958	27.893	27.866	25.889	25.863	25.363	25.323	25.363	25.863	26.528	26.352	26.262	26.263		26.395	26.402	26.416	27.2	27.139	27.135	27.135	27.789	27.848	27.876	27.876	27.716	27.831
							26.507	26.507	26.507	26.507	26.507	26.507	26.507	26.507	26.507			26.507	26.507	26.507										
27.477	27.544	27.541	27.563	27.618	27.603	27.525	25.797	25.672	25.634	25.626	25.562	25.52		25.853	25.95	26.075		26.878	26.988	27.041	27.165	27.507	27.594	27.615		27.668	27.566	27.546	27.432	27.554
-19.331	-15.249	-14.795	-14.755	-13.384	-10.864	-9.856	-1.922	0.727	2.727	4.727	6.727	8.727	13.934	14.477	15.014			18.15	18.561	18.969	19.281	19.332	21.849	22.855		25.371	26.74	26.741	27.234	31.31

CH 240



DATUM RL 17.0

WAE																										
DESIGN SURFACE LEVEL	28.06	27.94	27.9	28.1	28.07	28.009	27.984	26.045	26.008	25.508	25.468	25.508	26.008	26.053	27.979	28.005	28.069	28.1	27.9	27.94	28.084
FLOOD PLANNING EVENT								26.673	26.673	26.673	26.673	26.673	26.673	26.673							
EXISTING SURFACE LEVEL	27.709	27.754	27.754	27.754	27.774	27.731	27.659	25.929	25.784	25.81	25.827	25.769	25.763	26.084	27.84	27.85	27.933	27.757	27.749	27.7	27.741
OFFSET	-20.166	-16.113	-15.693	-15.623	-14.262	-11.761	-10.76	-2.986	0.693	2.693	4.693	6.693	8.693	13.225	20.92	21.921	24.424	25.785	25.825	26.276	30.33

CH 225

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS
SHEET 3

PLAN No: 11035005/CC319 A
FILE No: 11035005CC319
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:59:34 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC319.dwg

1:250 (AT A1)
1:500 (AT A3)
METRES

Plotted: 2 November , 2018 9:59:43 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC320.dwg

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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DATUM:
ORIGIN:

CLIENT: Stockland

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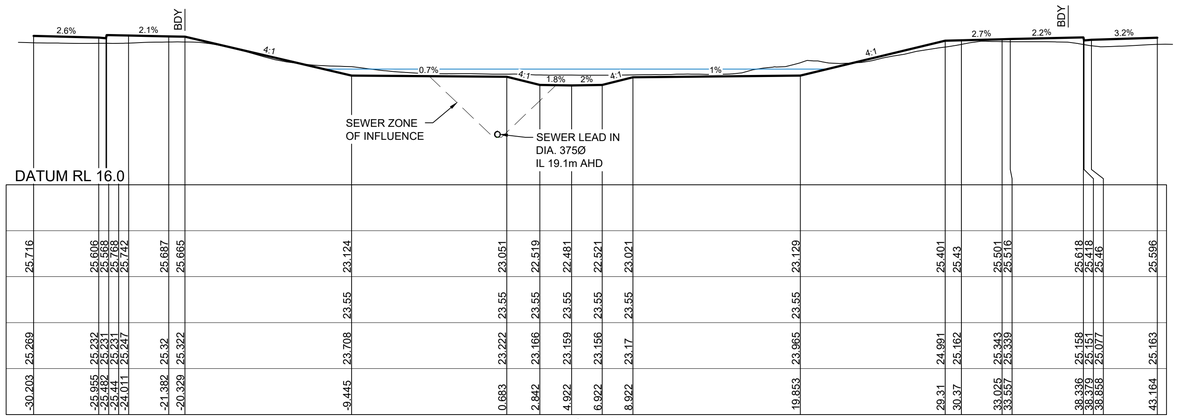
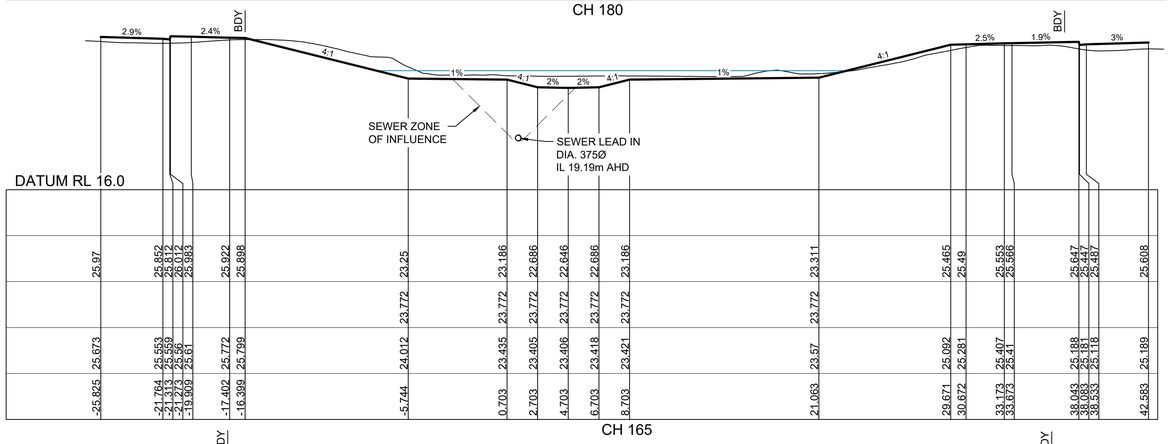
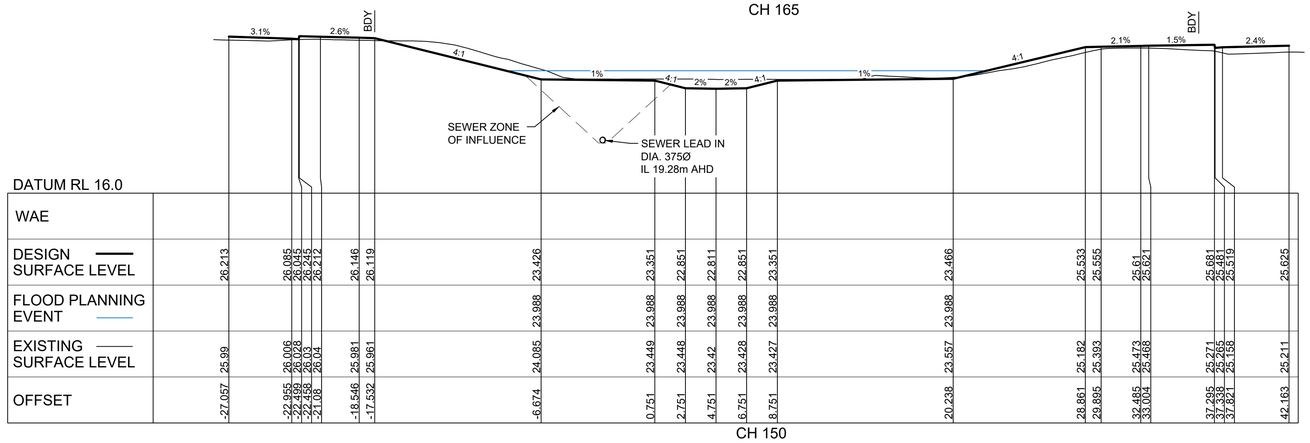
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS
SHEET 4

PLAN No: 11035005/CC320 A
FILE No: 11035005CC320
SHEET SIZE: A1 ORIGINAL







1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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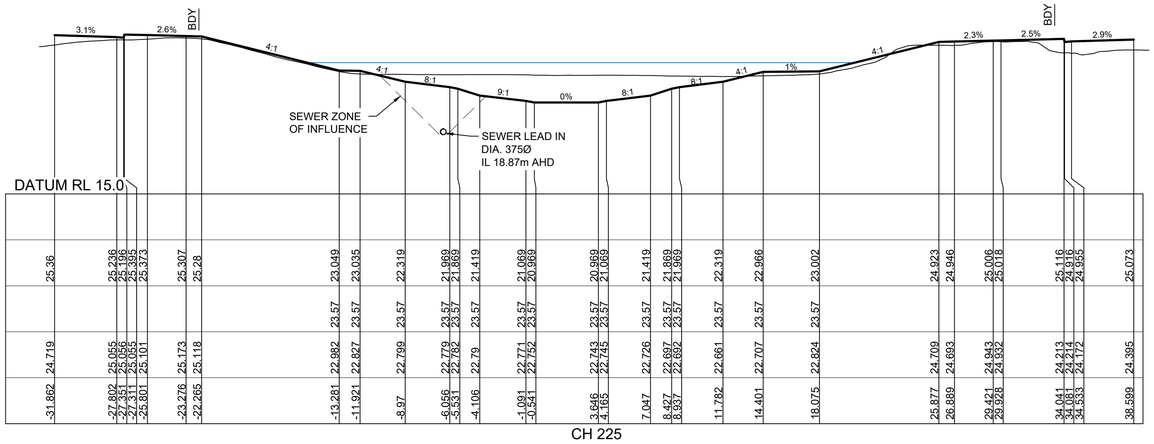
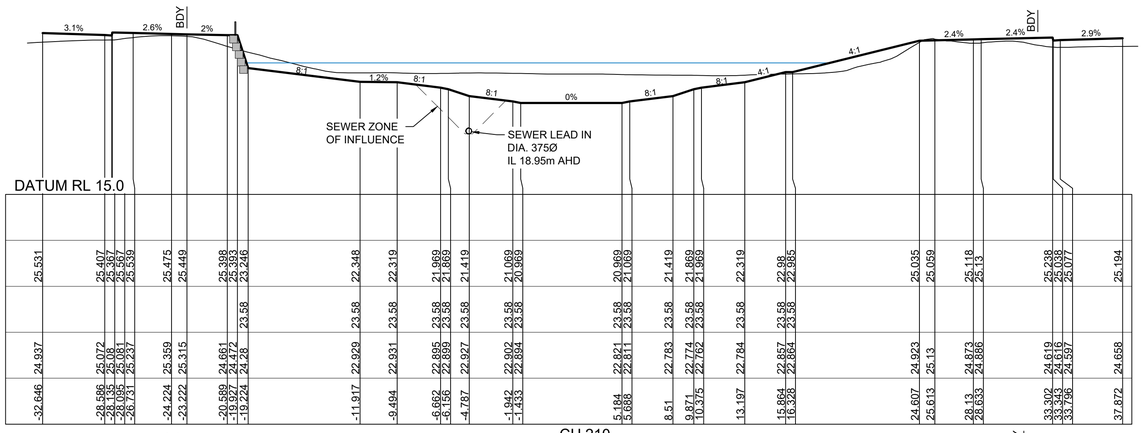
AZIMUTH:
DATUM:
ORIGIN:

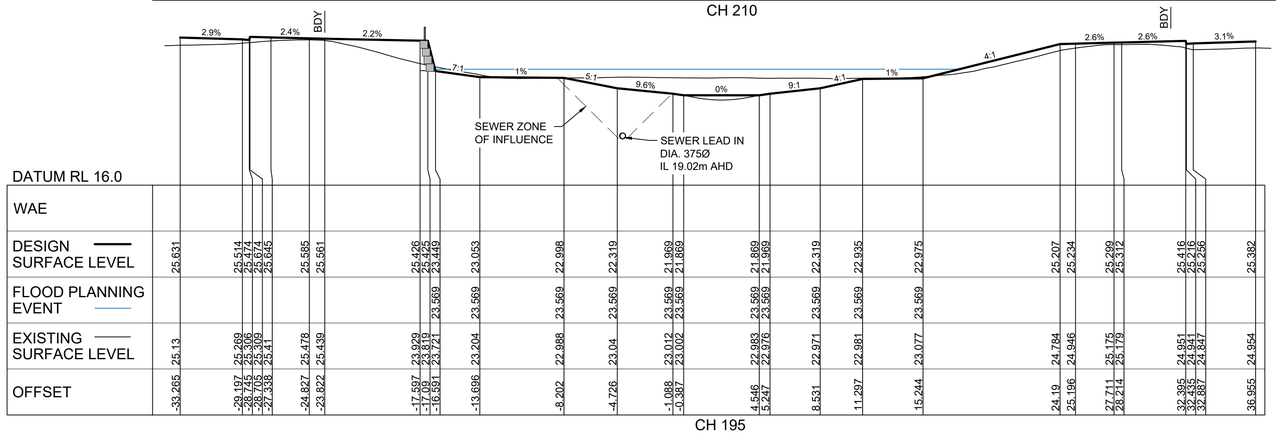
ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS
SHEET 5

PLAN No: 11035005/CC321 A
FILE No: 11035005CC321
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 9:59:52 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC321.dwg







1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25

METRES

CLIENT:

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ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS
SHEET 6

PLAN No: 11035005/CC322 A

FILE No: 11035005CC322

SHEET SIZE: A1 ORIGINAL

AZIMUTH:

DATUM:

ORIGIN:

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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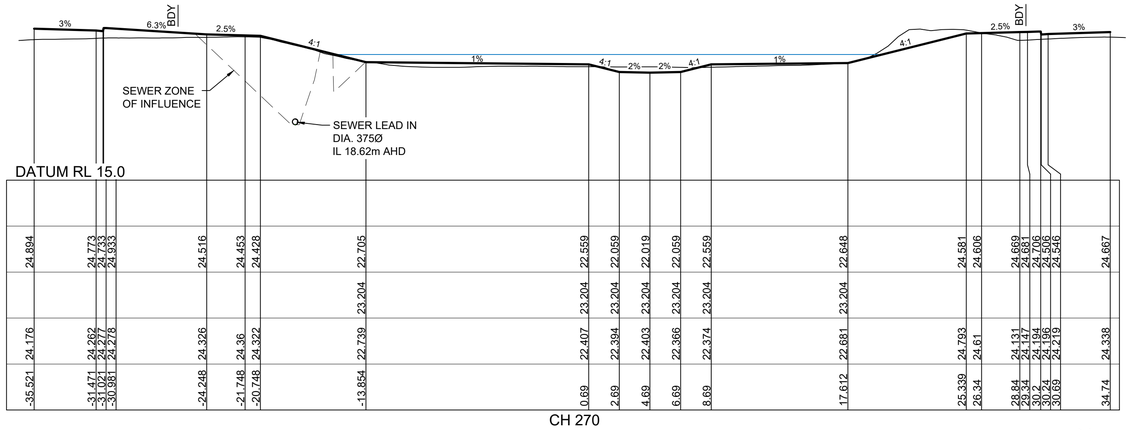
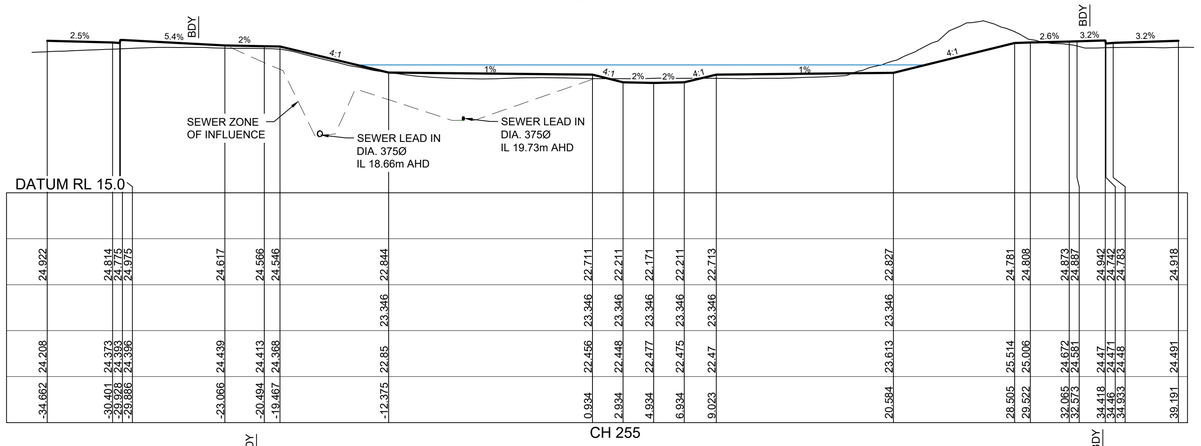
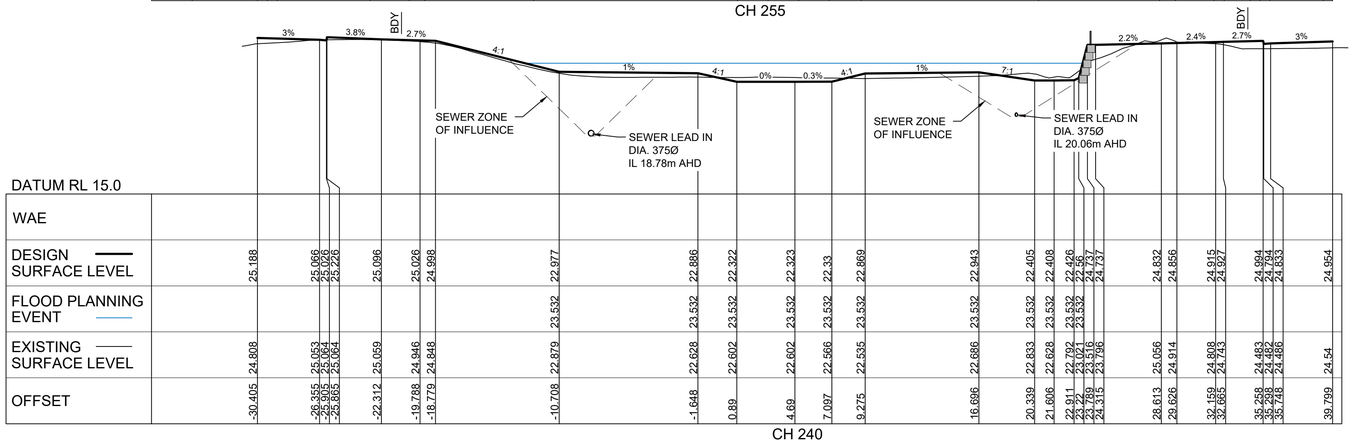
Plotted: 2 November , 2018 10:00:02 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC322.dwg







1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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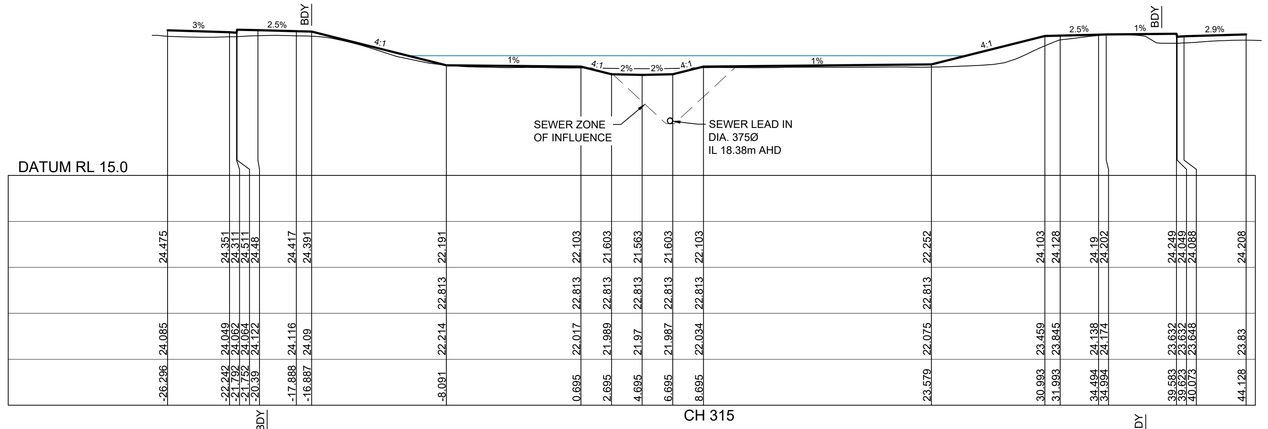
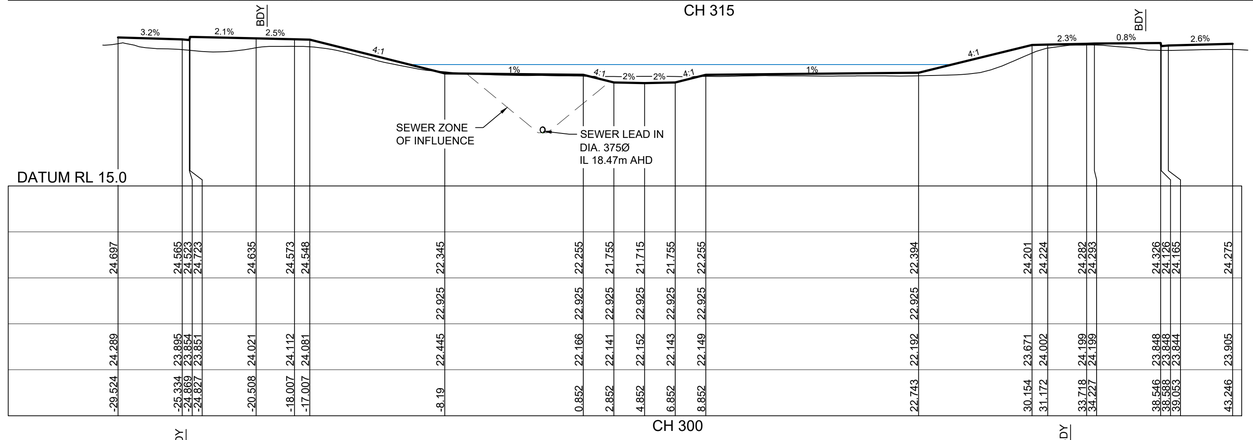
AZIMUTH:
DATUM:
ORIGIN:

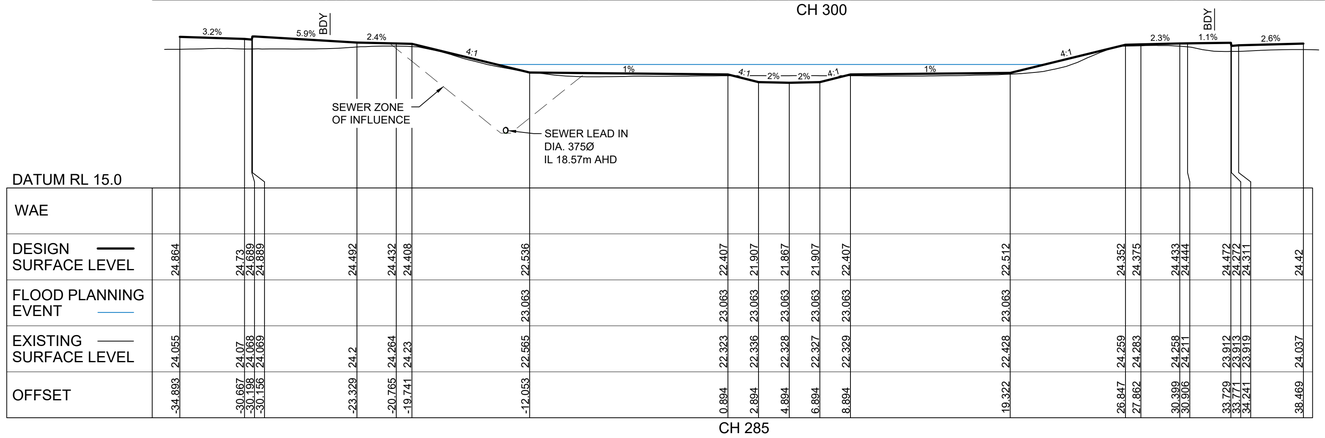
ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS
SHEET 7

PLAN No: 11035005/CC323 A
FILE No: 11035005CC323
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 10:00:12 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC323.dwg







1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
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CLIENT: Stockland

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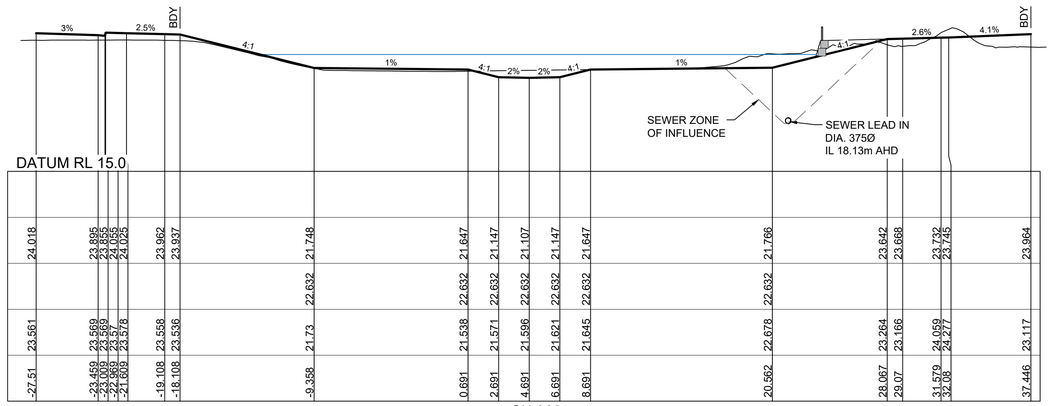
ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS
SHEET 8

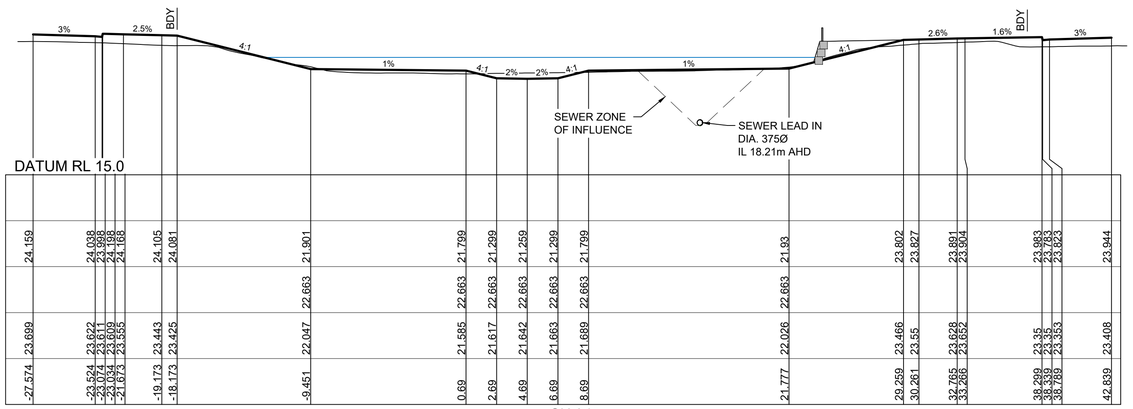
PLAN No: 11035005/CC324 A
FILE No: 11035005CC324
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:00:21 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC324.dwg



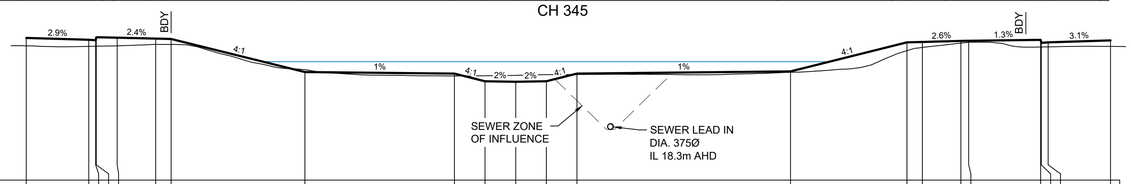
24.018	23.895	23.855	24.055	24.025	23.862	23.937	21.748	21.847	21.147	21.107	21.147	21.647	21.766	23.642	23.668	23.732	23.745	23.964
23.561	23.569	23.529	23.57	23.578	23.558	23.536	22.632	22.632	22.632	22.632	22.632	22.632	22.632					
	23.569	23.529	23.57	23.578	23.558	23.536	21.73	21.538	21.571	21.596	21.621	21.645	22.678	23.264	23.166	24.059	24.277	23.117
-27.51	-23.459	-23.009	-22.969	-21.609	-19.108	-18.108	-9.358	0.691	2.691	4.691	6.691	8.691	20.562	28.067	29.07	31.579	32.08	37.446

CH 360



24.159	24.038	23.998	24.008	24.168	24.105	24.081	21.901	21.799	21.239	21.259	21.299	21.799	21.93	23.802	23.827	23.891	23.904	23.983	23.943	23.923	23.944
23.699	23.622	23.611	23.619	23.555	23.443	23.425	22.047	22.663	22.663	22.663	22.663	22.663	22.663	23.466	23.55	23.628	23.652	23.35	23.35	23.353	23.408
-27.574	-23.524	-23.074	-23.064	-21.674	-19.173	-18.173	-9.451	0.69	2.69	4.69	6.69	8.69	21.777	29.259	30.261	32.765	33.266	38.289	38.789	39.789	42.839

CH 345



WAE																							
DESIGN SURFACE LEVEL	24.276	24.159	24.12	24.32	24.291	24.231	24.207	22.046	21.951	21.451	21.411	21.451	21.951	22.091	23.988	24.015	24.08	24.093	24.152	23.952	23.992	24.118
FLOOD PLANNING EVENT								22.727	22.727	22.727	22.727	22.727	22.727	22.727								
EXISTING SURFACE LEVEL	23.763	23.726	23.757	23.749	23.759	23.852	23.851	22.204	21.795	21.807	21.832	21.881	21.886	22.032	23.447	23.654	23.94	23.99	23.686	23.687	23.695	23.727
OFFSET	-27.236	-22.162	-22.709	-22.689	-21.301	-18.786	-17.78	-9.045	0.718	2.718	4.718	6.718	8.718	22.684	30.264	31.271	33.786	34.289	38.99	39.103	39.483	43.556

CH 330

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

CLIENT:

Stockland

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A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
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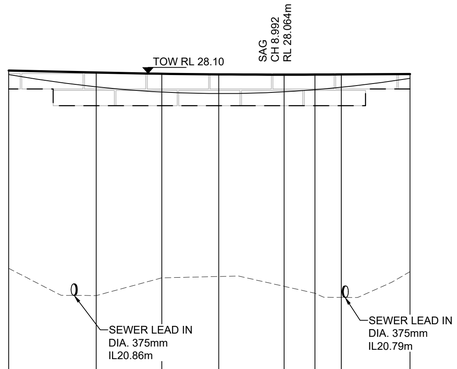
AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
CHANNEL TC01 - PART 1
CROSS SECTIONS
SHEET 9

PLAN No: 11035005/CC325 A
FILE No: 11035005CC325
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:00:46 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC325.dwg

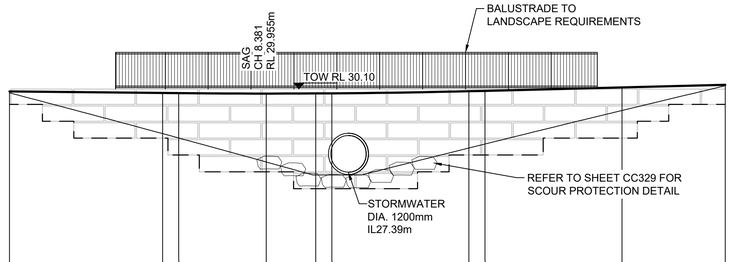
NOTE:
1. RETAINING WALLS SUBJECT TO STRUCTURAL CERTIFICATION.
2. SUBSOIL IS TO DISCHARGE THROUGH FACE OF WALL AT LOW POINT.



DATUM 18.0

WAE									
PARK FINISHED SURFACE LEVEL	28.201	28.135	28.094	28.073	28.064	28.066	28.071	28.087	
BOTTOM OF WALL SURFACE	28.066	27.667	27.500	27.450	27.507	27.576	27.655	27.944	
CHAINAGE	0.000	2.859	5.000	6.859	8.992	10.000	10.859	13.102	

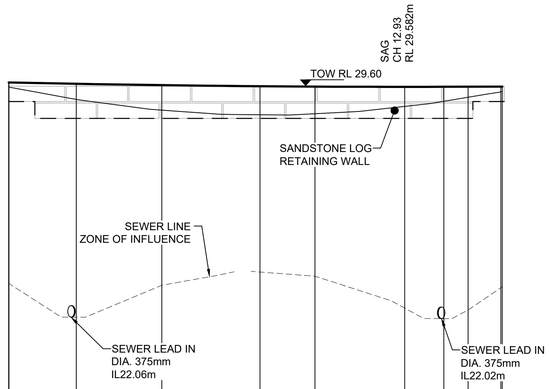
LONGITUDINAL SECTION REACH 1 PP3
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



DATUM 24.0

WAE												
PARK FINISHED SURFACE LEVEL	30.024	29.974	29.969	29.955	29.959	29.963	30.032	30.044	30.156	30.240		
BOTTOM OF WALL SURFACE	29.978	28.648	28.506	27.723	27.300	27.300	28.179	28.309	29.404			
CHAINAGE	0.000	5.000	5.524	8.381	10.000	10.524	15.000	15.524	20.000	23.369		

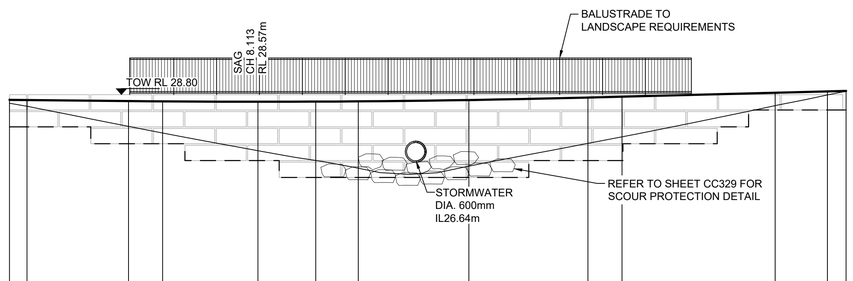
LONGITUDINAL SECTION REACH 1 PP4
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



DATUM 19.0

WAE												
PARK FINISHED SURFACE LEVEL	29.722	29.722	29.681	29.636	29.601	29.589	29.582	29.583	29.585	29.587	29.587	
BOTTOM OF WALL SURFACE	29.575	29.574	29.171	28.823	28.671	28.703	28.942	29.109	29.241	29.418	29.426	
CHAINAGE	0.000	0.007	2.205	5.000	8.205	10.000	12.930	14.205	15.000	16.070	16.114	

LONGITUDINAL SECTION REACH 1 PP1
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



DATUM 22.0

WAE														
PARK FINISHED SURFACE LEVEL	28.630	28.625	28.591	28.582	28.570	28.575	28.583	28.626	28.708	28.736	28.864	28.907	28.923	
BOTTOM OF WALL SURFACE	28.523	28.424	27.765	27.550	26.972	26.653	26.399	26.467	27.211	27.423	28.442	28.790	28.909	
CHAINAGE	0.000	0.575	3.887	5.000	8.113	10.000	11.387	15.000	18.887	20.000	25.000	26.705	27.312	

LONGITUDINAL SECTION REACH 1 PP2
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)

2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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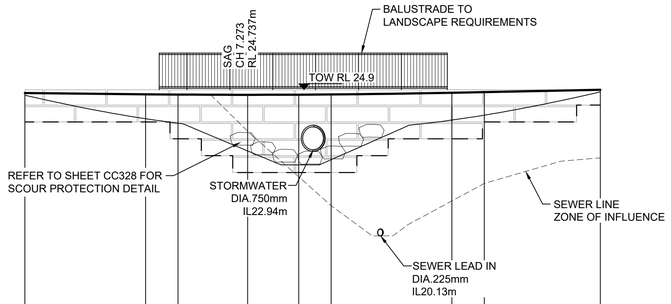
ELARA S94 WORKS
CHANNEL TC01 - PART 1
POCKET PARK RETAINING WALL DETAILS
SHEET 1

PLAN No: 11035005/CC326 A
FILE No: 11035005CC326
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:01:06 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC326.dwg

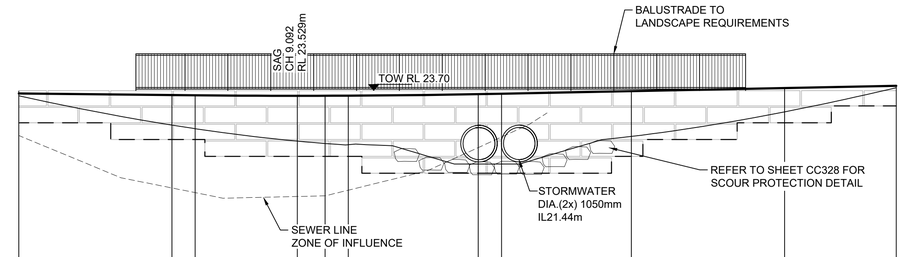
NOTE:
1. RETAINING WALLS SUBJECT TO STRUCTURAL CERTIFICATION.
2. SUBSOIL IS TO DISCHARGE THROUGH FACE OF WALL AT LOW POINT.



DATUM 17.0

WAE										
PARK FINISHED SURFACE LEVEL	24.793	24.753	24.744	24.737	24.741	24.748	24.803	24.825	24.900	
BOTTOM OF —— WALL SURFACE	24.724	23.956	23.810	22.903	22.450	22.621	23.912	24.072		
CHAINAGE	0.000	3.939	5.000	7.273	8.939	10.000	13.939	15.000	18.787	

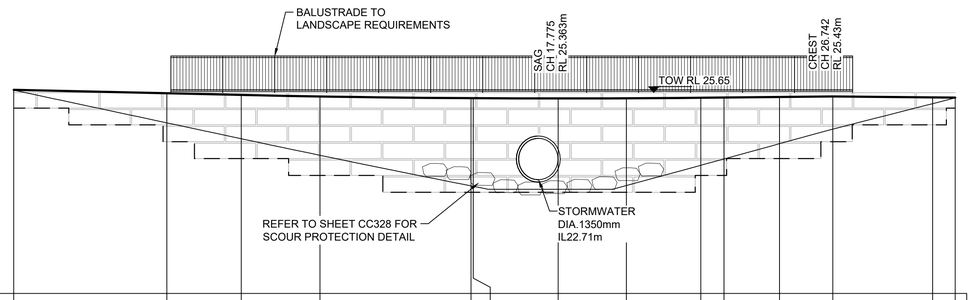
LONGITUDINAL SECTION REACH 2 PP3
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



DATUM 17.0

WAE											
PARK FINISHED SURFACE LEVEL	23.604	23.554	23.546	23.529	23.531	23.533	23.582	23.596	23.681	23.781	23.854
BOTTOM OF —— WALL SURFACE	23.528	22.571	22.455	22.049	21.972	21.933	21.300	21.300	22.203	23.005	
CHAINAGE	0.000	5.000	5.759	9.092	10.000	10.759	15.000	15.759	20.000	25.000	28.645

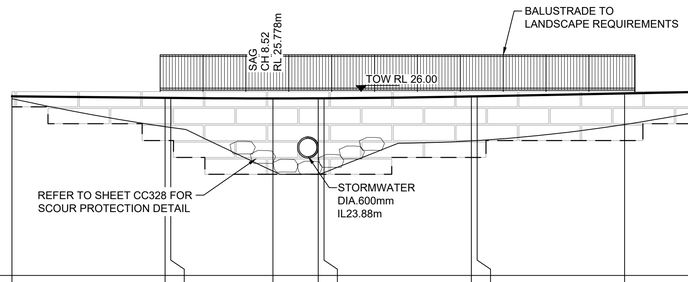
LONGITUDINAL SECTION REACH 2 PP4
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



DATUM 19.0

WAE															
PARK FINISHED SURFACE LEVEL	25.644	25.532	25.478	25.428	25.372	25.372	25.363	25.369	25.387	25.394	25.412	25.430	25.399	25.392	
BOTTOM OF —— WALL SURFACE	25.634	24.567	24.049	23.508	22.510	22.496	22.400	22.521	23.181	23.390	23.886	24.364	25.194		
CHAINAGE	0.000	5.000	7.430	10.000	14.930	15.000	17.775	20.000	22.430	23.191	25.000	26.742	30.000	30.738	

LONGITUDINAL SECTION REACH 2 PP1
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



DATUM 20.0

WAE													
PARK FINISHED SURFACE LEVEL	25.846	25.796	25.794	25.778	25.781	25.782	25.841	25.844	25.941	26.041	26.050		
BOTTOM OF —— WALL SURFACE	25.768	24.854	24.828	23.407	23.300	23.355	24.391	24.403	24.926	25.877			
CHAINAGE	0.000	5.000	5.187	8.520	10.000	10.187	15.000	15.187	20.000	25.000	25.458		

LONGITUDINAL SECTION REACH 2 PP2
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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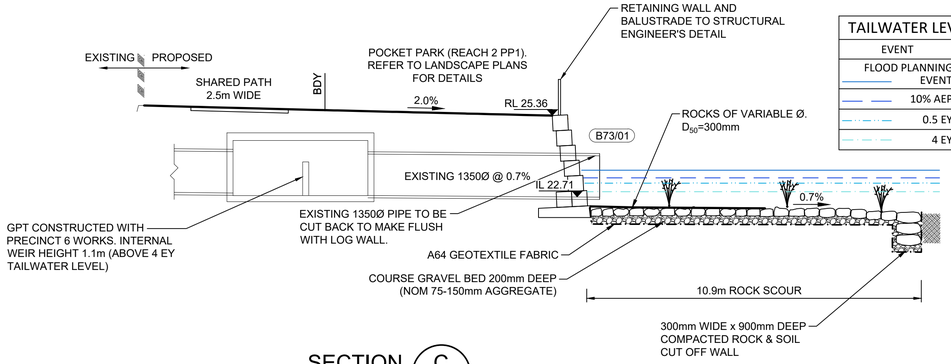
ELARA S94 WORKS
CHANNEL TC01 - PART 1
POCKET PARK RETAINING WALL DETAILS
SHEET 2

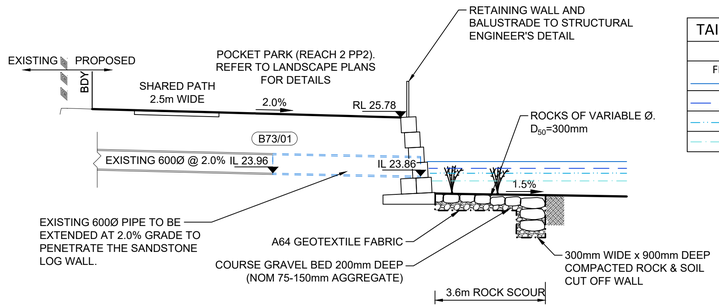
PLAN No: 11035005/CC327 A
FILE No: 11035005CC327
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 10:01:18 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC327.dwg



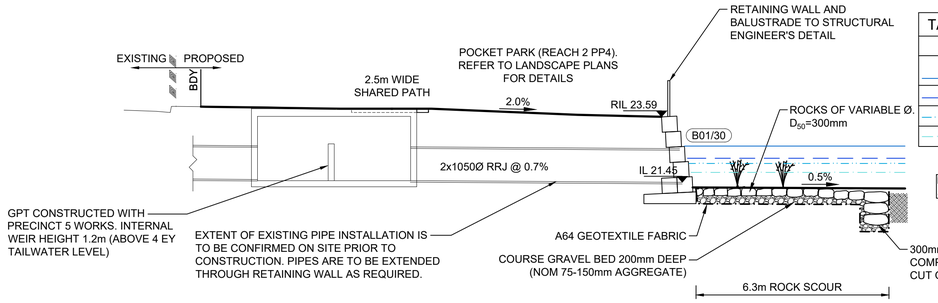
TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	23.58
10% AEP	23.33
0.5 EY	23.16
4 EY	22.88

SECTION C
SCALE H 1:100
V 1:100
CC304



TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	24.34
10% AEP	24.12
0.5 EY	23.96
4 EY	23.71

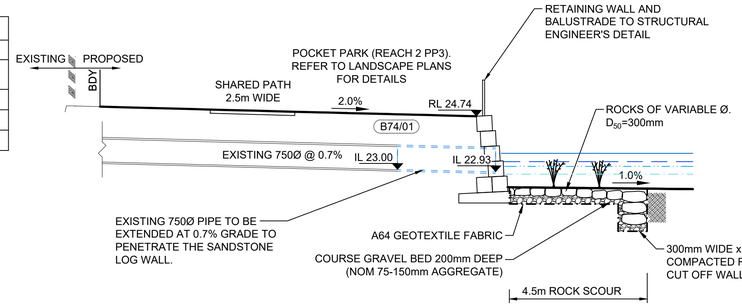
SECTION D
SCALE H 1:100
V 1:100
CC305



TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	22.64
10% AEP	22.24
0.5 EY	22.07
4 EY	21.78

NOTE: GPT INTERNAL WEIR ABOVE 4 EY TAIL WATER LEVEL

SECTION A
SCALE H 1:100
V 1:100
CC304



TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	23.54
10% AEP	23.26
0.5 EY	23.11
4 EY	22.85

SECTION B
SCALE H 1:100
V 1:100
CC304

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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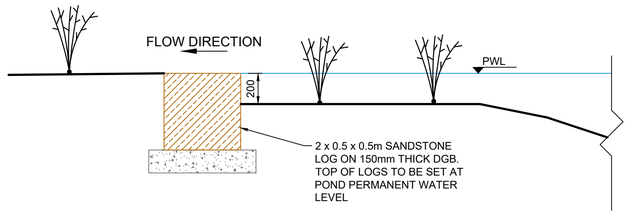
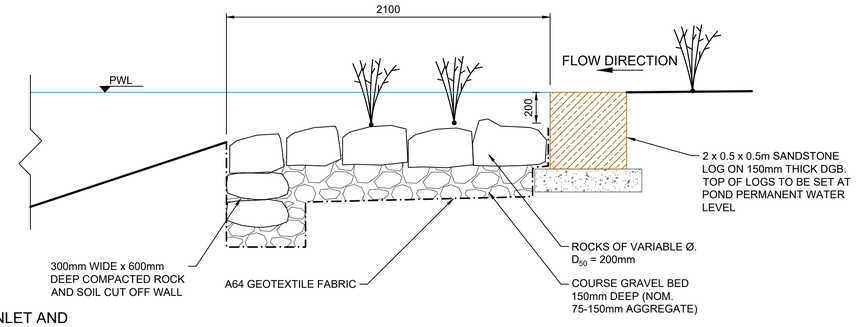
ELARA S94 WORKS
CHANNEL TC01 - PART 1
TAILOUT LONGITUDINAL SECTIONS
SHEET 1

PLAN No: 11035005/CC328 A
FILE No: 11035005CC328
SHEET SIZE: A1 ORIGINAL

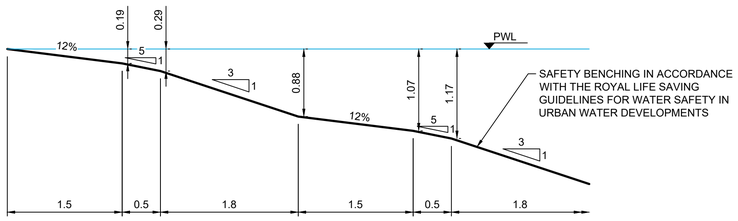
Plotted: 2 November, 2018 10:01:29 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC328.dwg



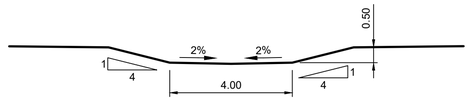


TYPCAL POND INLET AND OUTLET ROCK TREATMENT
SCALE 1:20

POND	LINEAR LENGTH OF SANDSTONE LOG SCOUR PROTECTION (m)	
	UPSTREAM	DOWNSTREAM
TC01 REACH 2	16	16

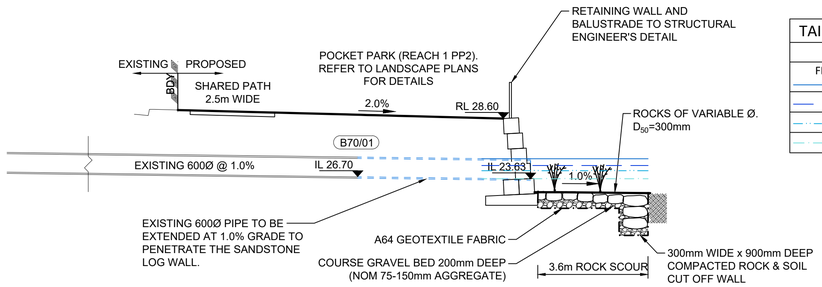


SECTION THROUGH TYPICAL SAFETY BENCHING
SCALE 1:40



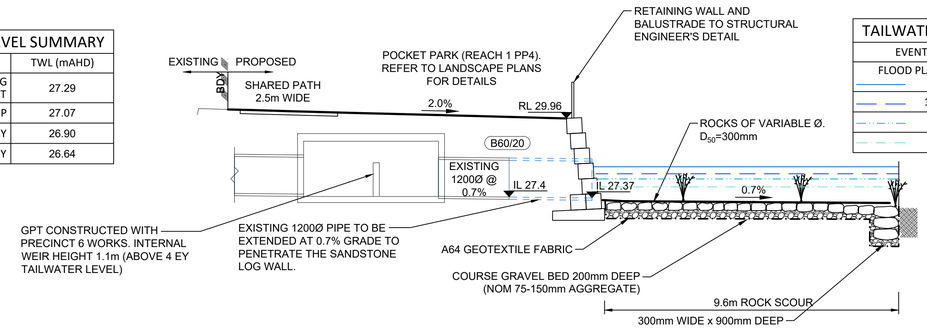
SECTION B CC257
SCALE H 1:100
V 1:100

TYPICAL SECTION THROUGH LOW FLOW CHANNEL



TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	27.29
10% AEP	27.07
0.5 EY	26.90
4 EY	26.64

SECTION E CC306
SCALE H 1:100
V 1:100



TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	28.39
10% AEP	28.16
0.5 EY	27.99
4 EY	27.73

SECTION F CC307
SCALE H 1:100
V 1:100

1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES
1:40 (AT A1) 800 400 0 800 1600 2400 3200 4000 MILLIMETRES
1:100 (AT A1) 1:200 (AT A3) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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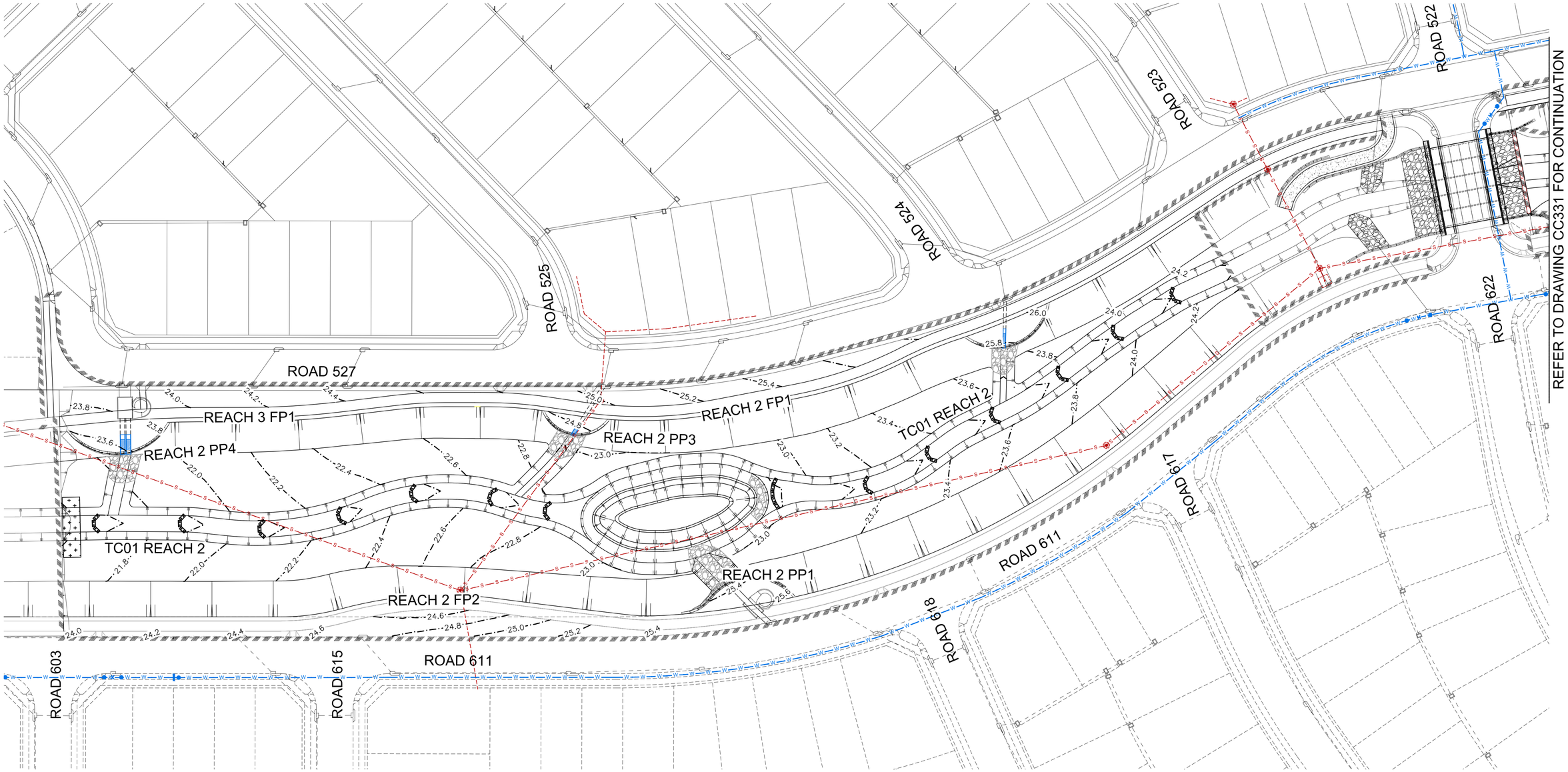
ELARA S94 WORKS
CHANNEL TC01 - PART 1
TAILOUT LONGITUDINAL SECTIONS
SHEET 2

PLAN No: 11035005/CC329 A
FILE No: 11035005CC329
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 10:01:43 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC329.dwg

LEGEND

- SEDIMENT FENCE
- STRAW BALE BARRIER
- MESH AND GRAVEL INLET FILTER
- CHECK DAM



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

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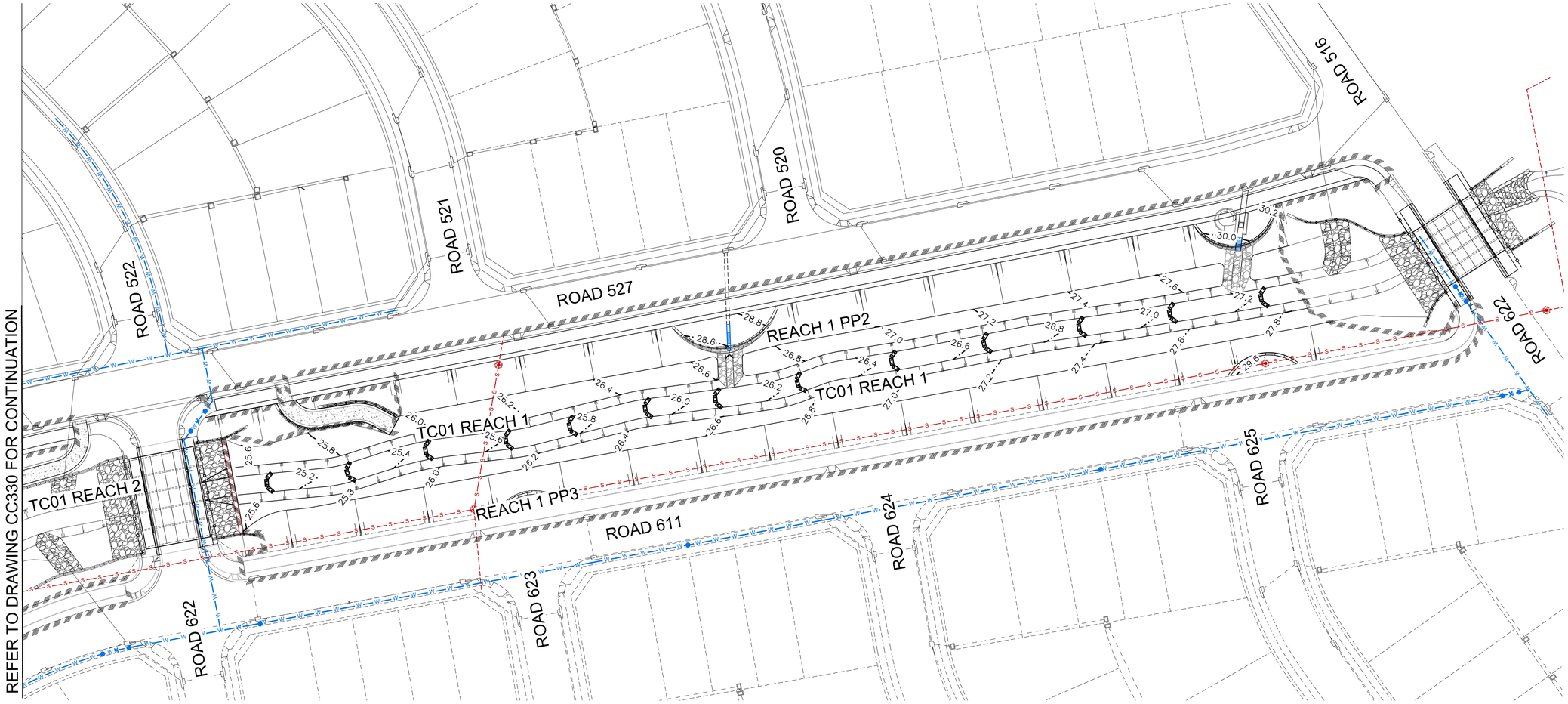
ELARA S94 WORKS
CHANNEL TC01 - PART 1
SOIL AND WATER MANAGEMENT PLAN
SHEET 1

PLAN No: 11035005/CC330 A
FILE No: 11035005CC330
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:02:09 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC330.dwg

LEGEND

- SEDIMENT FENCE
- STRAW BALE BARRIER
- MESH AND GRAVEL INLET FILTER
- CHECK DAM



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S94 WORKS
CHANNEL TC01 - PART 1
SOIL AND WATER MANAGEMENT PLAN
SHEET 2

PLAN No: 11035005/CC331 A
FILE No: 11035005CC331
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:02:32 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC331.dwg

SOIL AND WATER MANAGEMENT NOTES

GENERAL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE BLACKTOWN CITY COUNCIL.

2. BULK EARHWORKS ARE TO BE UNDERTAKEN IN STAGES. THE CONTRACTOR IS TO PREPARE A STAGING PLAN WHICH IS TO BE SUBMITTED TO THE PCA PRIOR TO THE COMMENCEMENT OF WORKS.

3. TOPSOIL FROM ALL AREAS TO BE DISTURBED SHALL BE STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN THOSE AREAS.

4. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILIZED AS EARLY AS POSSIBLE DURING DEVELOPMENT.

5. ALL TAIL-OUT DRAINS SHALL BE COUCH GRASSED AND TRAPEZOIDAL IN SECTION. STRAW BALES SHALL BE PLACED AS A SEDIMENT CONTROL DEVICE WHERE REQUIRED.

6. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING DEVELOPMENT CONFINING ACCESS WHERE POSSIBLE TO PROPOSED OR EXISTING ROAD ALIGNMENTS. AREAS TO BE LEFT UNDISTURBED SHALL BE MARKED OFF.

7. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.

8. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM 60% FULL OF SOLID MATERIALS, INCLUDING DURING THE MAINTENANCE PERIOD.

9. THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.

10. CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" ("THE BLUE BOOK").

11. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.

12. THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (PREF 2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES - WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDENTIFIED WITH BARRIER FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 10m	THE SITE MANAGER SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES. WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION.

NOTE:
WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED - ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE C-FACTORS BELOW 0.05 FROM 1st JANUARY TO 15th MAY USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

13. GENERALLY WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE AND WILL BE DETAILED IN THE CONSTRUCTION CERTIFICATE DRAWINGS. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:-

    a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE CC PLANS AND TO DETAIL(SD) 6-7.
    b. CONSTRUCT STABILISED SITE ACCESS AS SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-7.
    c. CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-3.
    d. PROVIDE TEMPORARY ACCESS TO THE SEDIMENT BASIN(S)AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6-7 OR BARRIER FENCING AND EARTH BANKS (SD) 5-2.
    e. PLACE SEDIMENT FENCING (SD) 6-7 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.
    f. CONSTRUCT SEDIMENT BASIN(S) GENERALLY IN ACCORDANCE WITH (SD) 6-4
    g. STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASIN(S) AS SOON AS FINAL LEVELS ARE ESTABLISHED
    h. CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE CC PLANS OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD) 4-1.
    i. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS.
    j. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
    k. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

14. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE

15. EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER THAN:-

    a. 2(h) - 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
    b. 2.5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
    c. 3(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
    d. 4(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
    e. 5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
    f. 6(h) - 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

    SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

16. PROTECTION FROM EROSIVE FORCES SHALL BE UNDERTAKEN ON ALL LANDS TO MEET THE REQUIREMENTS OF TABLE J3-3 "MAXIMUM ACCEPTABLE C-FACTORS AT NOMINATED TIMES DURING WORKS" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION"

17. TEMPORARY GROUND COVER IN SHEET FLOW AREAS IS TO BE IN ACCORDANCE WITH TABLE J3-4 "PLANT SPECIES FOR GROUND COVER" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" WHERE PRACTICAL FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATED AREAS

18. WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO BE SCHEDULED SO THAT THE TIME FROM STARTING LAND DISTURBANCE ACTIVITIES TO STABILISATION IS A DURATION OF LESS THAN 6 MONTHS - THIS MEANS ACHIEVING A C-FACTOR OF LESS THAN 0.1 AND SETTING IN MOTION A PROGRAM THAT ENSURES THAT IT DROPS PERMANENTLY, (BY VEGETATION, PAVING, ARMOURING etc.) TO LESS THAN 0.05 WITHIN A FURTHER 60 DAYS. LOCAL WATER RESTRICTIONS PERMITTING, LANDS THAT HAVE BEEN NEWLY PLANTED WITH GRASS SPECIES SHALL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER HAS BEEN ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER SHALL BE APPLIED AS NECESSARY IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE VEGETATIVE PROTECTION. NOTWITHSTANDING THIS SCHEDULE WORKS SO THAT THE DURATION FROM THE CONCLUSION OF LAND SHAPING TO THE COMPLETION OF FINAL STABILISATION IS LESS THAN 20 WORKING DAYS.

19. SEDIMENT FENCES (SD) 6-7 SHALL:-

    a. BE INSTALLED WHERE SHOWN ON THE CC PLANS AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
    b. HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m, AND A STORAGE DEPTH OF AT LEAST 0.6m.
    c. PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHMENT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 40litres/sec IN A MAX. 20yr Tc DISCHARGE.

20. STOCKPILES (SD) 4-1 SHALL BE LOCATED AS SHOWN ON THE CC PLANS AND AT THE DISCRETION OF THE SITE SUPERINTENDENT.

21. DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDANTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.

22. NOTWITHSTANDING NOTE 21 STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.

23. THE SEDIMENT RETENTION BASINS (SD) 6-4 SHALL:-

    a. BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
    b. BE FLOCCULATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
    c. HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.

24. STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:-

    a. LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
    b. THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
    c. THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT
    d. DISCHARGING SEDIMENT FROM THE SITE.

25. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR.

26. WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD) 6-8 & 6-9.

27. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED.

28. ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

STOCKPILE NOTES:

1. SPOIL AN TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREAS WHERE WATER MAY CONCENTRATE.

2. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 14 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.

3. FOLLOWING CONSTRUCTION, TOPSOIL SHALL BE RESPREAD TO A MINIMUM DEPTH OF 100mm ON THE BARE SOIL SURFACES AND REVEGETATE.

4. PLASTIC SHEETING MUST BE PLACED OVER THE STOCKPILE TO MINIMISE WIND BLOWN DUST.

SEDIMENTATION CONTROL DEVICES:

1. ALL STRAW BALES SHALL BE BOUND WITH WIRE. STRAW BALES SHALL BE PLACED END TO END IN A SINGLE ROW AND EMBEDDED INTO THE SOIL TO A DEPTH OF 100mm. EACH BALE SHALL BE SECURELY ANCHORED WITH TWO STEEL STAKES DRIVEN 450mm INTO THE GROUND AND LOCKED ON THE BALE CENTRELINE.

2. SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG IT'S LOWER EDGE.

3. PROVIDE STRIP OF TURF MIN. 300mm WIDE BEHIND KERB + 1m WIDE AROUND ALL SURFACE INLET PITS

SITE INSPECTION AND MAINTENANCE:

1. A SELF-AUDITING PROGRAM SHALL BE ESTABLISHED BASED ON A CHECK SHEET. A SITE INSPECTION USING THE CHECK SHEET SHALL BE MADE BY THE SITE MANAGER-:

    a. AT LEAST WEEKLY
    b. IMMEDIATELY BEFORE SITE CLOSURE
    c. IMMEDIATELY FOLLOWING RAINFALL EVENTS IN EXCESS OF 5mm IN ANY 24hr PERIOD.

    THE SELF AUDIT SHALL INCLUDE:-

    a. RECORDING THE CONDITION OF EVERY 'BEST MANAGEMENT PRACTICE' EMPLOYED
    b. RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH 'BEST MANAGEMENT PRACTICE'
    c. RECORDING THE VOLUMES OF SEDIMENT REMOVED FROM SEDIMENT RETENTION SYSTEMS WHERE APPLICABLE
    d. RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
    e. FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER FOR THEIR INFORMATION.

2. IN ADDITION A SUITABLY QUALIFIED PERSON SHALL BE RESPONSIBLE FOR OVERSEEING THE INSTALLATION AND MAINTENANCE OF ALL SOIL AND WATER MANAGEMENT WORKS ON THE SITE. THE PERSON SHALL BE REQUIRED TO SPEND A MINIMUM OF:-

    a. 2hrs ONSITE EACH FORTNIGHT UP UNTIL COMPLETION OF ROAD AND DRAINAGE WORKS AND/OR THE COMMISSIONING OF SEDIMENT BASIN(S)/WATER QUALITY CONTROL FACILITIES, AND DURING THE DECOMMISSIONING OF SAME AND/OR FINAL SITE STABILISATION. TO PROVIDE A SHORT MONTHLY WRITTEN REPORT.
    b. ONE HOUR ONSITE EACH 2 MONTHS DURING THAT PHASE WHERE THE DEVELOPERS RESPONSIBILITIES ARE LIMITED TO MAINTENANCE OF THE SDS DEVICES AND/OR SEDIMENT BASINS (ie DURING THE STAGE WHEN BUILDING WORKS CAN BE UNDERTAKEN) TO PROVIDE A SHORT WRITTEN REPORT EACH 4 MONTHS

    THE RESPONSIBLE PERSON SHALL ENSURE THAT:-

    a. THIS PLAN IS BEING IMPLEMENTED CORRECTLY
    b. REPAIRS ARE BEING UNDERTAKEN AS REQUIRED
    c. ESSENTIAL MODIFICATIONS TO THIS PLAN ARE BEING MADE IF AND WHEN NECESSARY EACH REPORT SHALL CERTIFY THAT WORKS HAVE BEEN CARRIED OUT ACCORDING TO THE APPROVED PLANS.

3. WASTE BINS SHALL BE EMPTIED AS NECESSARY, DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT

4. PROPER DRAINAGE OF THE SITE SHALL BE MAINTAINED. TO THIS END DRAINS (INCLUDING INLET AND OUTLET WORKS) SHALL BE CHECKED TO ENSURE THAT THEY ARE OPERATING AS INTENDED,ESPECIALLY THAT:-

    a. NO LOW POINTS EXIST WHICH CAN OVERTOP IN A LARGE STORM EVENT.
    b. AREAS OF EROSION ARE REPAIRED (e.g LINED WITH SUITABLE MATERIAL) AND/OR VELOCITY OF FLOW IS REDUCED APPROPRIATELY THROUGH CONSTRUCTION OF SMALL CHECK DAMS OR INSTALLING ADDITIONAL DIVERSIONS UPSLOPE
    c. BLOCKAGES ARE CLEARED (THESE MIGHT OCCUR BECAUSE OF SEDIMENT POLLUTION, SAND/SOIL/SPOIL BEING DEPOSITED IN OR TOO CLOSE TO THEM, BREACHED BY VEHICLE WHEELS etc)

5. SAND/SOIL/SPOIL MATERIALS PLACED CLOSER THAN 2m FROM HAZARD AREAS SHALL BE REMOVED SUCH HAZARD AREAS INCLUDE ANY AREAS OF HIGH VELOCITY WATER FLOWS (eg WATERWAYS AND GUTTERS) PAVED AREAS AND DRIVEWAYS.

6. RECENTLY STABILISED LANDS SHALL BE CHECKED TO ENSURE THAT THE EROSION HAZARD HAS BEEN EFFECTIVELY REDUCED. ANY REPAIRS SHALL BE INITIATED AS APPROPRIATE.

7. EXCESSIVE VEGETATIVE GROWTH SHALL BE CONTROLLED THROUGH MOWING OR SLASHING.

8. ALL SEDIMENT DETENTION SYSTEMS SHALL BE KEPT IN GOOD WORKING CONDITION. IN PARTICULAR ATTENTION SHALL BE GIVEN TO:-

    a. RECENT WORKS TO ENSURE THAT THEY HAVE NOT RESULTED IN DIVERSION OF SEDIMENT LADEN WATER AWAY FROM THEM.
    b. DEGRADABLE PRODUCTS TO ENSURE THAT THEY ARE REPLACED AS REQUIRED
    c. SEDIMENT REMOVAL TO ENSURE THE DESIGN CAPACITY OR LESS REMAINS IN THE SETTLING ZONE.

9. ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS SHALL BE CONSTRUCTED AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS (ie MAKE ONGOING CHANGES TO THIS PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS AT THE WORKS SITE OR ELSEWHERE IN THE CATCHMENT.

10. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN A FUNCTIONING CONDITION UNTIL ALL EARTHWORKS ACTIVITIES ARE COMPLETED AND THE SITE STABILISED.

11. WATERS IN SEDIMENT RETENTION BASIN(S) THAT OCCUPY MORE THAN 1/4 OF THE DESIGN CAPACITY DURING THAT STAGE OF THE WORKS UP UNTIL COMMISSIONING OF THE BASIN(s) SHALL BE:-

    a. TREATED WITH A FLOCCULATING AGENT (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.)
    b. DISCHARGED WITHIN 5 days FROM THE CONCLUSION OF ANY STORM EVENT LARGE ENOUGH TO FILL THE BASIN TO THAT LEVEL.

12. LITTER, DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM THE GROSS POLLUTANT TRAPS AND TRASH RACKS AS REQUIRED.

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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ORIGIN:

CLIENT: Stockland

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ELARA S94 WORKS
CHANNEL TC01 - PART 1
SOIL AND WATER MANAGEMENT NOTES

PLAN No: 11035005/CC332 A
FILE No: 11035005CC332
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:02:39 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC332.dwg

SHARED PATH - PAVEMENT MARKING SCHEDULE

CODE	USE	STYLE	COLOUR & TYPE
TBB	Give way line on Path	0.2m 0.20 0.2m 0.15	Reflectorised white
S5	Bicycle lane separation line for off-road bike path (straight sections)	0.08 3 1	Reflectorised white

NOTES

1. ALL PAVEMENT MARKINGS, CHEVRONS AND REFLECTORS ARE TO BE IN ACCORDANCE WITH Rms STANDARD DRAWINGS MD.R60 AND AUSTRALIAN STANDARDS.
2. ALL SIGNS TO BE IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARD;
   AS 1743 - ROAD SIGNS AND COUNCIL'S SPECIFICATION UNLESS OTHERWISE SHOWN.
3. ROAD SIGNS ARE SIZE 'A', UNLESS OTHERWISE SHOWN. LOCATE OUTSIDE OF CLEAR ZONES.
4. ALL NEW PAVEMENT MARKINGS ARE TO BE INSTALLED IN WHITE, REFLECTIVE, THERMOPLASTIC PAINT.
5. KERBSIDE LANE WIDTHS INCLUDE THE WIDTH OF THE GUTTER.
6. RE-MARK EXISTING PAVEMENT MARKINGS AS DIRECTED BY THE COUNCIL'S ENGINEER.
7. THE SLOPED FACE OF BARRIER MEDIAN KERB ARE TO BE PAINTED WHITE (E6 LINE) IN LIEU OF AN E3 EDGE LINE. YELLOW REFLECTIVE PAVEMENT MARKERS TO BE PLACED ON PAVEMENT @ 6 METRE SPACINGS ADJACENT TO THE BARRIER KERB.
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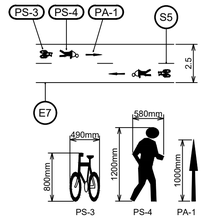
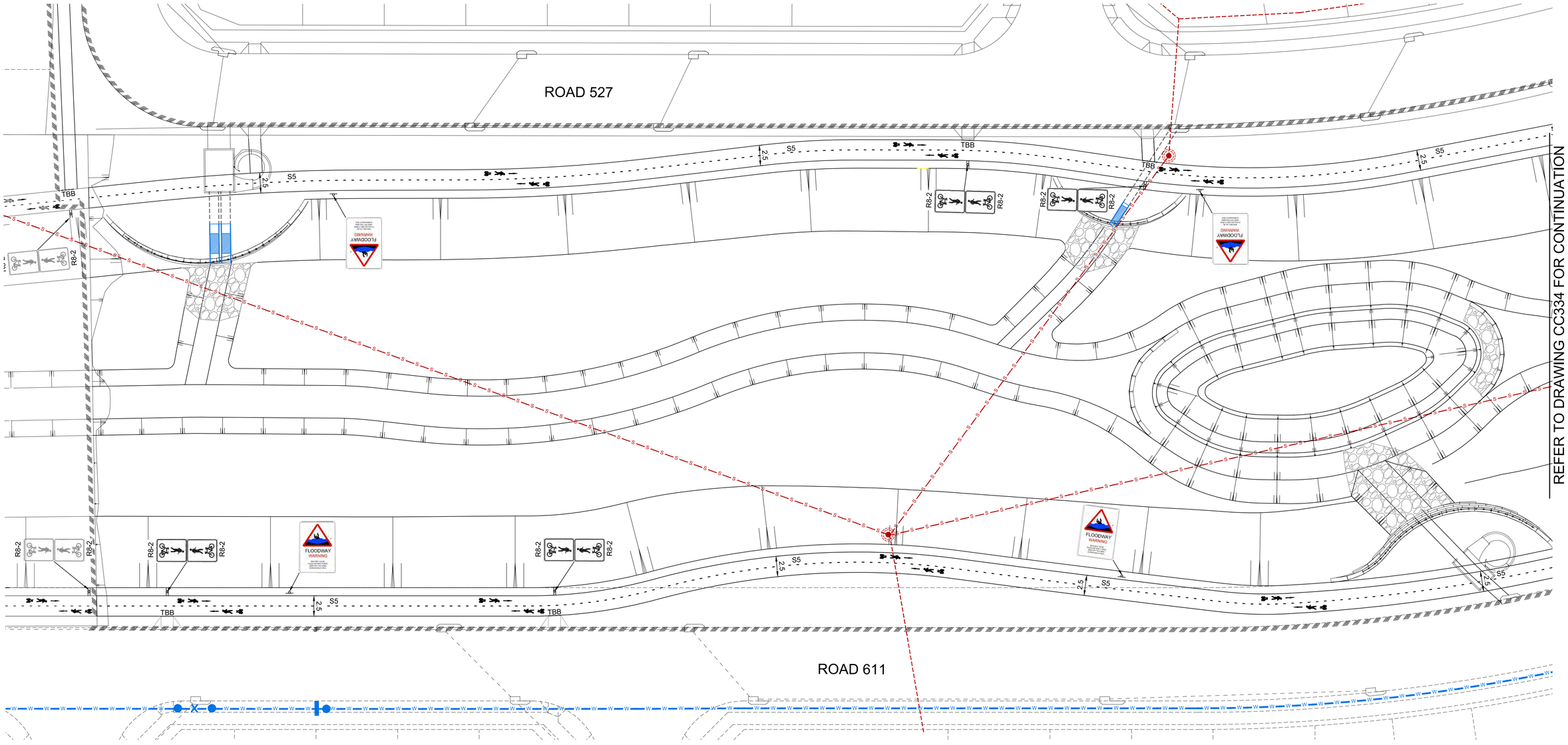
9. ALL MEASUREMENTS ARE IN METRES UNLESS OTHERWISE SHOWN.



TYPICAL SHARED PATH PAVEMENT ARRANGEMENT
N.T.S.



1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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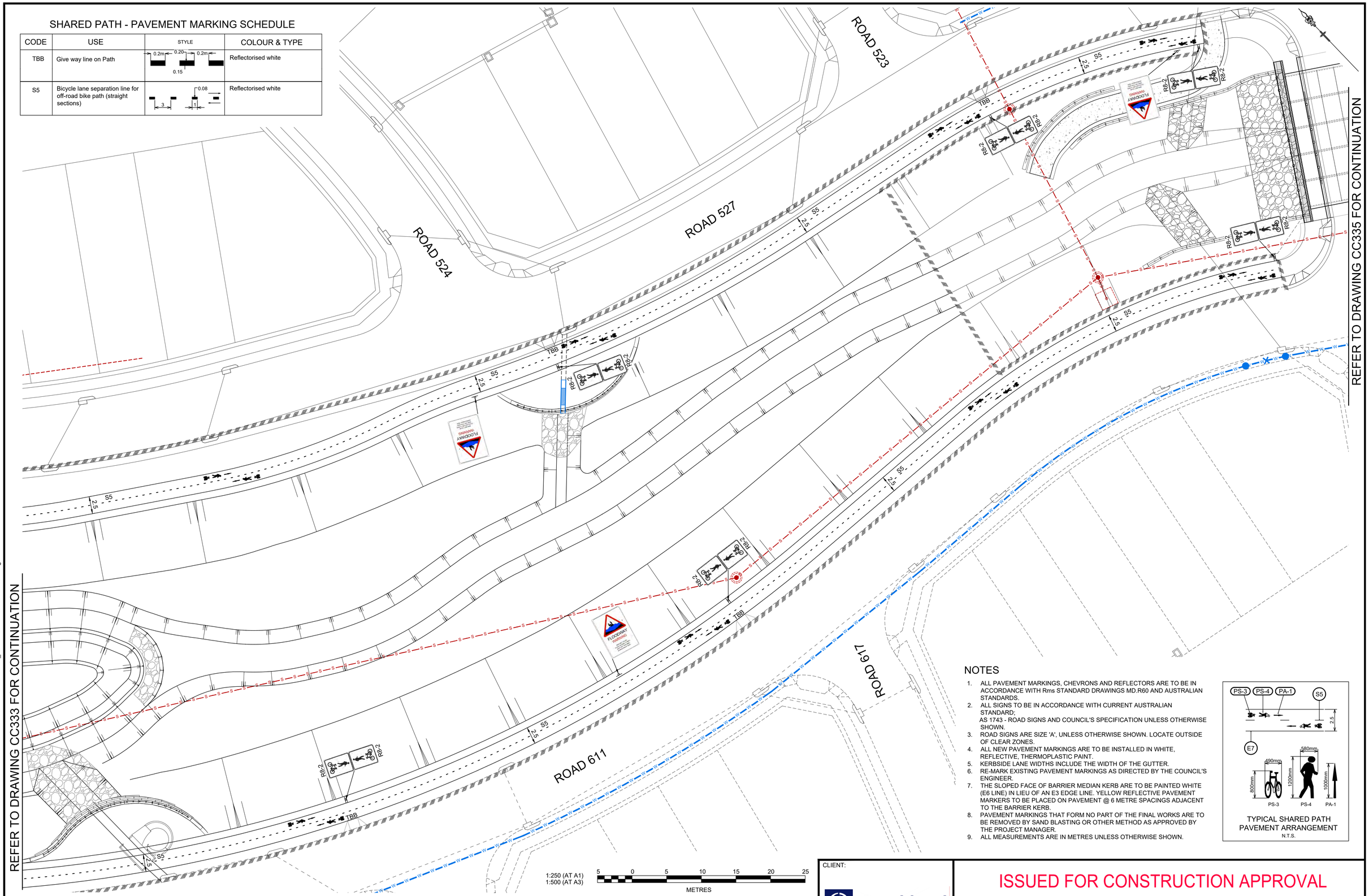
ELARA S94 WORKS
CHANNEL TC01 - PART 1
SIGNAGE AND LINEMARKING PLAN
SHEET 1

PLAN No: 11035005/CC333 A
FILE No: 11035005CC333
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:03:03 AM File Name : J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC333.dwg

SHARED PATH - PAVEMENT MARKING SCHEDULE

CODE	USE	STYLE	COLOUR & TYPE
TBB	Give way line on Path	0.2m 0.20 0.2m 0.15	Reflectorised white
S5	Bicycle lane separation line for off-road bike path (straight sections)	0.08 3 1	Reflectorised white



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TYPICAL SHARED PATH PAVEMENT ARRANGEMENT
N.T.S.

CLIENT: Stockland

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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ORIGIN:

ELARA S94 WORKS
CHANNEL TC01 - PART 1
SIGNAGE AND LINEMARKING PLAN
SHEET 2

PLAN No: 11035005/CC334 A
FILE No: 11035005CC334
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:03:27 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC334.dwg

SHARED PATH - PAVEMENT MARKING SCHEDULE

CODE	USE	STYLE	COLOUR & TYPE
TBB	Give way line on Path	0.2m 0.20 0.2m 0.15	Reflectorised white
S5	Bicycle lane separation line for off-road bike path (straight sections)	0.08 3 1	Reflectorised white

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TYPICAL SHARED PATH PAVEMENT ARRANGEMENT
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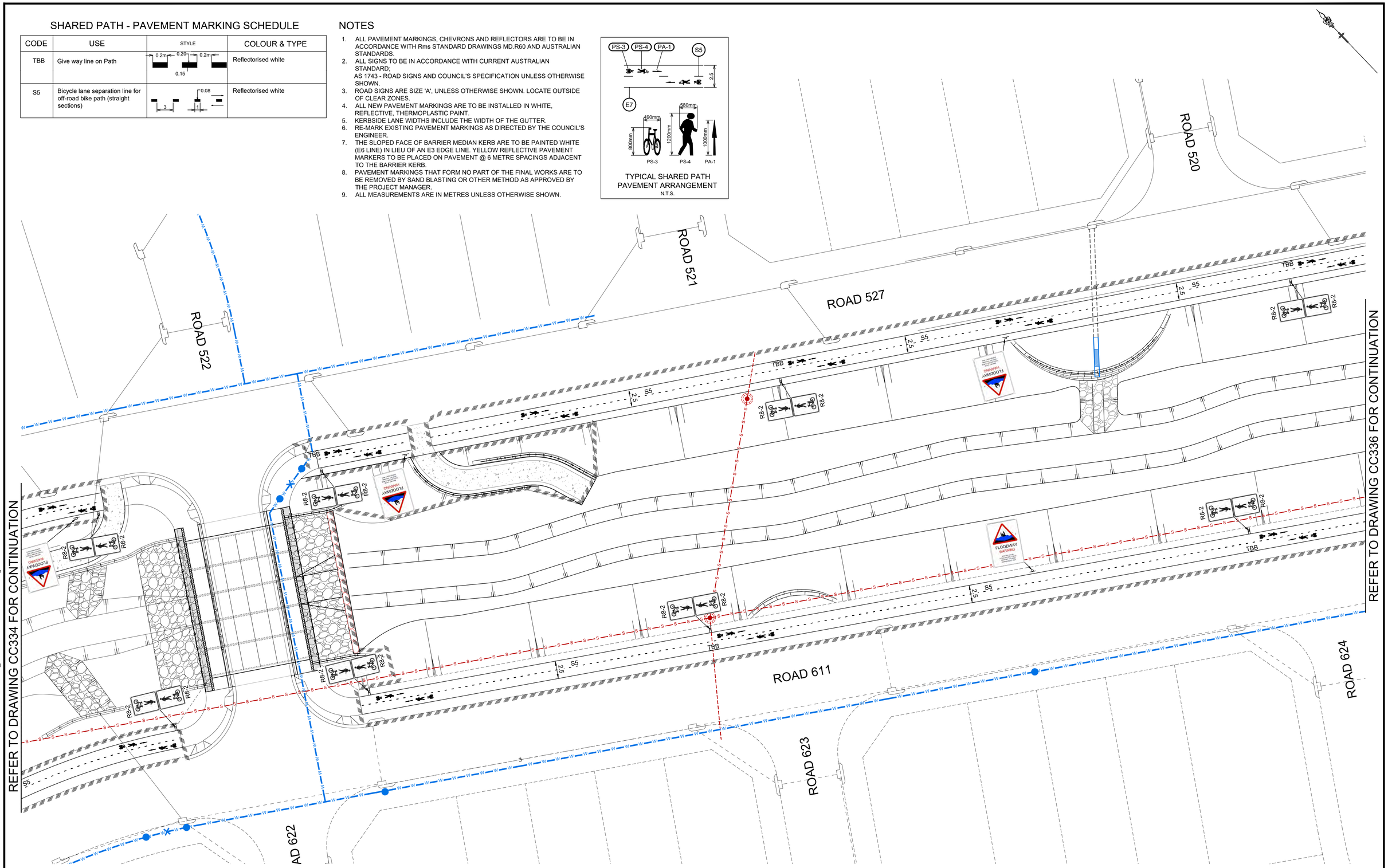

1:250 (AT A1)
1:500 (AT A3)
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METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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ELARA S94 WORKS
CHANNEL TC01 - PART 1
SIGNAGE AND LINEMARKING PLAN
SHEET 3

PLAN No: 11035005/CC335 A
FILE No: 11035005CC335
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:03:50 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC335.dwg

SHARED PATH - PAVEMENT MARKING SCHEDULE

CODE	USE	STYLE	COLOUR & TYPE
TBB	Give way line on Path	0.2m 0.20 0.2m 0.15	Reflectorised white
S5	Bicycle lane separation line for off-road bike path (straight sections)	0.08 3 1	Reflectorised white

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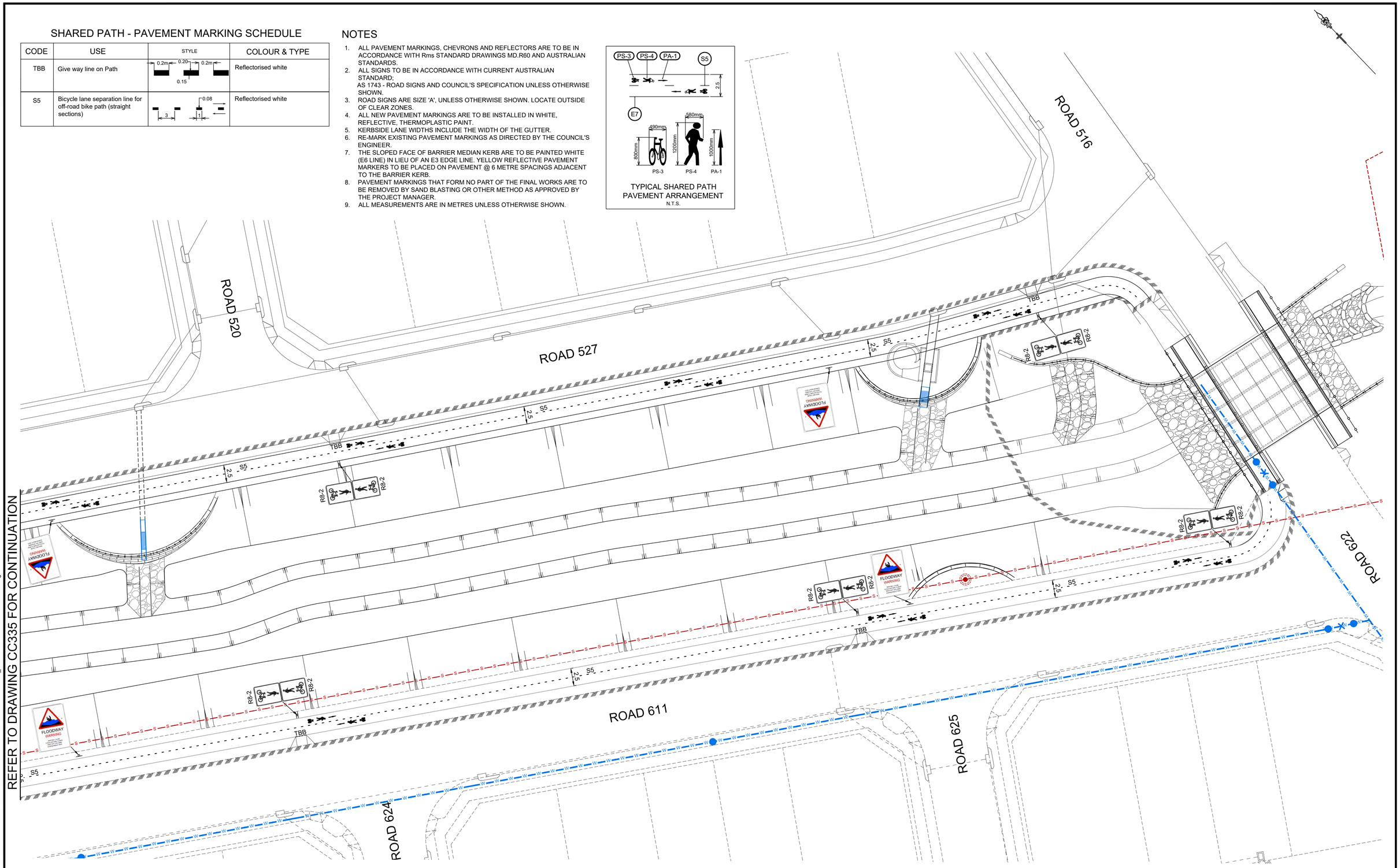
TYPICAL SHARED PATH PAVEMENT ARRANGEMENT
N.T.S.



1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
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ORIGIN:

ELARA S94 WORKS
CHANNEL TC01 - PART 1
SIGNAGE AND LINEMARKING PLAN
SHEET 4

PLAN No: 11035005/CC336 A
FILE No: 11035005CC336
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:04:13 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\06_TC01 Part 1\11035005CC336.dwg

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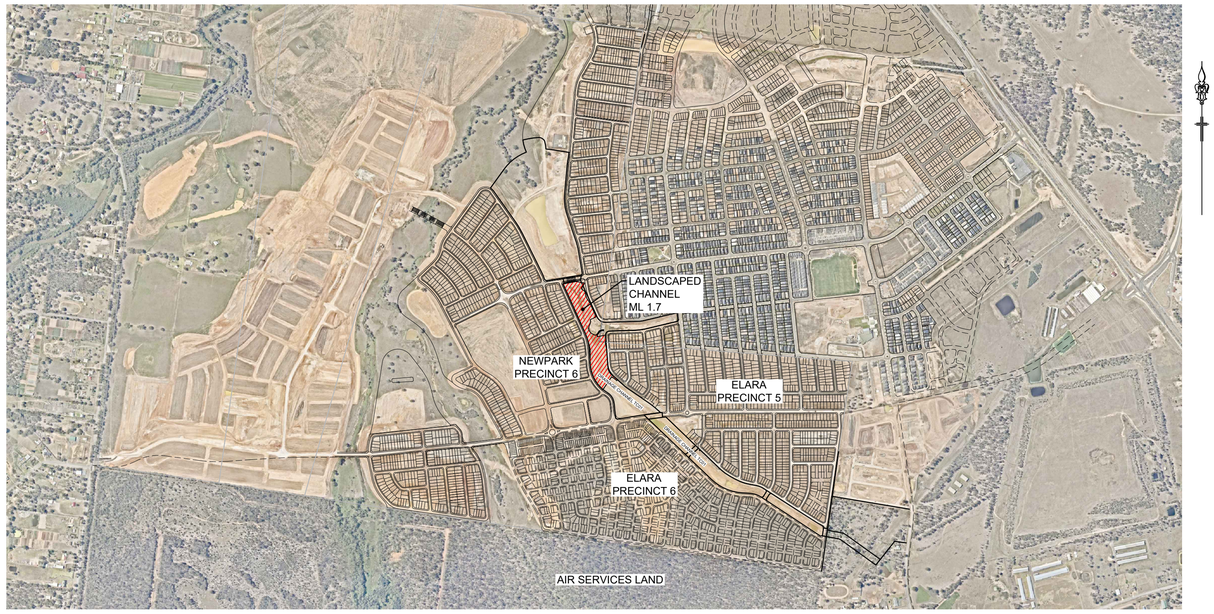
ELARA : TC01 - PART 2
SECTION 7.11 CONSTRUCTION CERTIFICATE
CONTRIBUTION PLAN No.21, ITEM ML1.7 (PART)
COUNCIL REFERENCE: JRPP-15-02324



LOCALITY SKETCH

Prepared By:

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300
W www.jwprince.com.au
E jwp@jwprince.com.au

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PLAN No. 11035005/CC350 A

FILE No. 11035005CC350

Plotted: November 6, 2018 File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC350.dwg

LEGEND

DESCRIPTION	PROPOSED	EXISTING	FUTURE
EXTENT OF WORKS			
KERB & GUTTER	K&G		
ROLL KERB	RK		
DISH CROSSING	DC		
PRAM RAMP			
DRAINAGE LINE, PIT & EASEMENT	05/05 Ø225		
DRAINAGE LINE & PIT	05/06 Ø600		
SUBSOIL DRAINAGE	SS SS		
HEADWALL			
CONTOURS	46.0	47.0	
CATCH DRAIN			
ELECTRICITY, POWER POLE	E E E E	eE eE FP eE	
TELECOM, BOX	T T T T	eT eT eT eT	
WATER, STOP VALVE, HYDRANT	W W W W	eW eW HYD eW SV	
SEWER, MANHOLE	S S S S	eS eS SMH	
GAS	G G G G	eG eG eG	
STABILISED SITE ACCESS			
SEDIMENT FENCE			
STRAW BALE BARRIER			
STOCKPILE	SP		
PROTECTIVE FENCING			
MESH AND GRAVEL INLET FILTER			
GEOTEXTILE INLET FILTER			
CATCHMENT BOUNDARY			
FLOW DIRECTION ARROW			
FLOOD PLANNING LEVEL			
FLOOD PLANNING LEVEL CONTOUR	52.5		

CIVIL PLAN INDEX

PLAN NO.	PLAN NAME	REV
11035005/CC350	COVER SHEET	A
11035005/CC351	NOTES, INDEX AND LEGEND	A
11035005/CC352	OVERALL ARRANGEMENT PLAN	A
11035005/CC353	PAVEMENT AND GROUND COVER PLAN	A
11035005/CC354	ENGINEERING PLAN SHEET 1	A
11035005/CC355	ENGINEERING PLAN SHEET 2	A
11035005/CC356	ENGINEERING PLAN SHEET 3	A
11035005/CC357	SETOUT TABLES, FOOTPATH DETAILS AND TYPICAL ROAD SECTION	A
11035005/CC358	CUT / FILL PLAN SHEET 1	A
11035005/CC359	CUT / FILL PLAN SHEET 2	A
11035005/CC360	CHANNEL LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC361	CHANNEL LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC362	FOOTPATH LONGITUDINAL SECTIONS	A
11035005/CC363	CROSS SECTIONS PLAN SHEET 1	A
11035005/CC364	CROSS SECTIONS PLAN SHEET 2	A
11035005/CC365	CROSS SECTIONS SHEET 1	A
11035005/CC366	CROSS SECTIONS SHEET 2	A
11035005/CC367	CROSS SECTIONS SHEET 3	A
11035005/CC368	CROSS SECTIONS SHEET 4	A
11035005/CC369	CROSS SECTIONS SHEET 5	A
11035005/CC370	CROSS SECTIONS SHEET 6	A
11035005/CC371	CROSS SECTIONS SHEET 7	A
11035005/CC372	CROSS SECTIONS SHEET 8	A
11035005/CC373	CROSS SECTIONS SHEET 9	A
11035005/CC374	CROSS SECTIONS SHEET 10	A
11035005/CC375	POCKET PARK LONGITUDINAL SECTIONS	A
11035005/CC376	DETAIL SECTIONS SHEET 1	A
11035005/CC377	DETAIL SECTIONS SHEET 2	A
11035005/CC378	GPT ACCESS DETAILS	A
11035005/CC379	SOIL AND WATER MANAGEMENT PLAN SHEET 1	A
11035005/CC380	SOIL AND WATER MANAGEMENT PLAN SHEET 2	A
11035005/CC381	SOIL AND WATER MANAGEMENT NOTES	A
11035005/CC382	SIGNAGE AND LINEMARKING PLAN	A

CONTRIBUTIONS PLAN (NO.21) ITEMS INCLUDED IN THIS APPLICATION

SITE NO.	DESCRIPTION
ML 1.7	LANDSCAPED OPEN CHANNEL

GENERAL NOTES

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S "WORKS SPECIFICATION - CIVIL 2005".
2. SURVEY MARKS: -
   a. SURVEY MARKS SHOWN SHALL BE RETAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE SUPERINTENDENT MUST BE NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL.
3. THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
4. THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE OWNERS. TO BE PROVIDED PRIOR TO THE APPROVAL OF THE PLANS.
5. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJOINING PROPERTIES.
6. COUNCIL'S TREE PRESERVATION ORDER MUST BE OBSERVED AND NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT THE PRIOR APPROVAL OF COUNCIL'S ENGINEER.
7. TREES TO BE RETAINED ON SITE SHALL BE PROTECTED BY SUITABLE STURDY APPROVED PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF SITE WORKS.
8. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES, OUT-HOUSES, CAR BODIES AND DEBRIS ETC.
9. FILLING IS TO BE FROM A NOMINATED SOURCE, OF SOUND CLEAN MATERIAL, FREE FROM LARGE ROCK, STUMPS, CONTAMINATED MATTER, INDUSTRIAL AND BUILDING WASTE, ORGANIC MATTER AND OTHER DEBRIS. PLACING OF FILLING ON THE PREPARED AREAS SHALL NOT COMMENCE UNTIL THE AUTHORITY TO DO SO HAS BEEN OBTAINED FROM THE COUNCIL.
10. THE FILL MATERIAL THAT MAY BE RECEIVED AT THE DEVELOPMENT SITE ARE EXCAVATED NATURAL MATERIALS (VENM) AND EXCAVATED NATURAL MATERIAL (ENM) WITHIN THE MEANING OF THE PROTECTION OF THE ENVIRONMENTAL OPERATIONS ACT1997.
11. SITE FILL AREAS: - THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
12. ALL SITE FILLING TO BE COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY A REGISTERED SOIL LABORATORY IN ACCORDANCE WITH COUNCIL'S "WORKS SPECIFICATION".
13. ALL SITE REGRADING AREAS SHALL BE GRADED AT A MINIMUM 1% TO THE ENGINEER'S REQUIREMENTS.
14. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED BY THE SUPERINTENDENT.
15. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS.
16. DIMENSIONS OF ANY DETAIL SHALL NOT BE SCALED - DIMENSIONS, IF IN DOUBT, SHALL BE VERIFIED BY THE SUPERINTENDENT.
17. ALL CONSTRUCTION AND RESTORATION WORK ON COUNCIL'S ROAD AND FOOTPATH AREA ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS AND COUNCIL'S STANDARD SPECIFICATIONS.
18. ALL WORKS TO BE IN ACCORDANCE WITH THE SALINITY MANAGEMENT PLAN BY GEOTECH TESTING PTY LTD 8537/2-AA
19. ALL STREET NAME POLES AND LIGHT POLES SHALL BE BLACK POWDER COATED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S ENGINEERING GUIDE FOR DEVELOPMENT.

SURFACE NOTES

1. BATTER SLOPES ARE TYPICALLY 1v:4h UNLESS NOTED OTHER WISE.

SURVEY SET OUT INFORMATION NOTES:

1. ALL SITE SET OUT AND CONTROL POINTS ARE TO BE CERTIFIED BY A REGISTERED SURVEYOR.
2. THE INFORMATION DETAILED ON THE CERTIFIED CONSTRUCTION CERTIFICATE PLANS TAKES PRECEDENCE OVER ALL ELECTRONIC INFORMATION PROVIDED. THE ORDER OF PRIORITY FOR USE OF ALL INFORMATION PROVIDED IS AS FOLLOWS:
   a. CERTIFIED CONSTRUCTION CERTIFICATE DRAWINGS
   b. 2D DRAFTING BASE (ELECTRONIC FILE)
   c. 3D DTM (ELECTRONIC FILE)
3. ANY DISCREPANCY BETWEEN ANY OF THE INFORMATION CONTAINED WITHIN THESE FILES IS TO BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT PRIOR TO CONSTRUCTION WHO WILL SEEK CLARIFICATION AND ISSUE INSTRUCTIONS ON THE APPROPRIATE COURSE OF ACTION.

STORMWATER NOTES

1. STORMWATER DESIGN CRITERIA:

   ANNUAL EXCEEDANCE PROBABILITY (AEP):
   1% AEP MAJOR SYSTEM
   10% AEP MINOR SYSTEM
2. PIPES TO BE INSTALLED TO TYPE HS2 SUPPORT IN ACCORDANCE WITH AS 3725 (1989) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 300mm LAYERS TO MINIMUM 100% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
3. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
4. GRATES AND COVERS SHALL CONFORM TO AS 3996.
5. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
6. DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH NON-COHESIVE SAND AND HAVE 3m OF SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK, DISCHARGING INTO DOWN STREAM PITS. FOR PIPELINES GREATER THAN 525Ø, SUBSOIL DRAIN SHALL BE PROVIDED ON BOTH SIDES OF THE TRENCH.
7. ALL STORMWATER PIPES WITHIN ROADS TO BE REINFORCED CONCRETE PIPE (RRJ) CLASS 2 OR FRC CLASS 2 UNLESS NOTED OTHERWISE.
8. DRAINAGE LINES ON PLANS ARE DIAGRAMMATIC ONLY AND PIPE CENTRELINES SHALL ENTER AND EXIT PITS AT THE CENTRE OF THE RESPECTIVE PIT WALLS.
9. STEP IRONS REQUIRED WHERE THE PIT EXCEEDS 1200 IN DEPTH. REFER TO COUNCIL DRAWING A(BS)107M.

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING
- THE ELARA SECTION 94 DETAILED CONCEPT PLANS BY J.WYNDHAM PRINCE 11035005/DC01-72.
- CHANNEL TC02 ML1.22 REFER TO J.WYNDHAM PRINCE PLANS 11035005/CC100-CC136.
- CULVERT ABELL ROAD REFER TO J.WYNDHAM PRICE PLANS 11035005/CC250-CC297.
- LANDSCAPE PLANS BY PATERSON DESIGN STUDIO.

www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG

UTILITIES SHOWN ARE DIAGRAMMATIC ONLY, CONTRACTORS ARE RESPONSIBLE TO LOCATE AND AVOID DAMAGE TO THEM AS SPECIFIED BY EACH UTILITIES EXCAVATION GUIDE LINES & STANDARDS.

NOTE: UTILITIES SHOWN MAY NOT INCLUDE ALL SERVICES WITHIN THE LIMIT OF WORKS

SURVEYED BY:
BMD BULK EARTHWORKS SURFACE
CAD REFERENCE: tin BEW 171214.12daz
DATE RECEIVED: 29/01/2018

CRAIG & RHODES DRONE SURVEY
CAD REFERENCE: 20180213_C&R_MARSDEN-PARK_ELEVATION.dwg
DATE RECEIVED: 22/02/2018

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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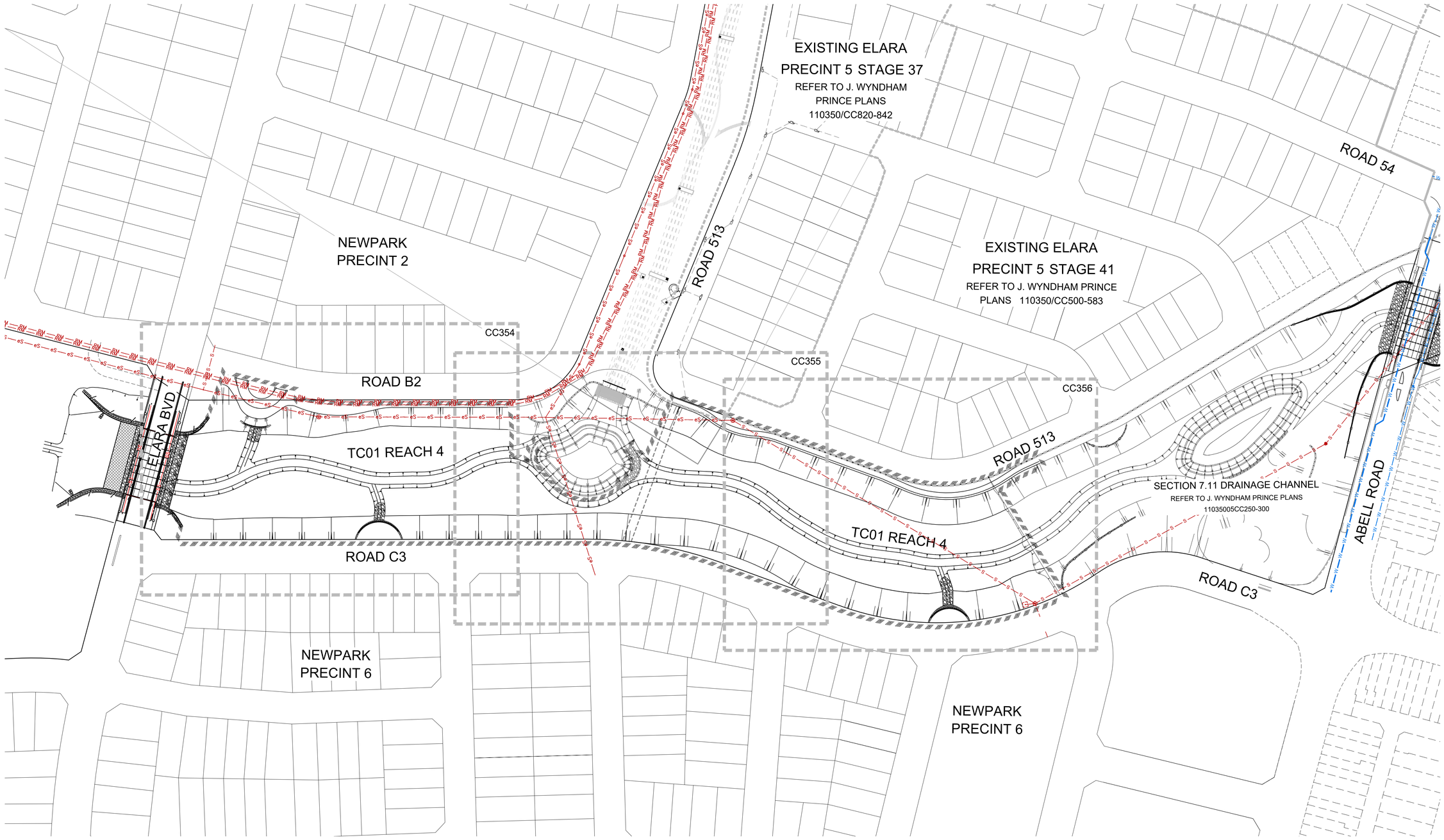
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
NOTES, INDEX AND LEGEND

PLAN No: 11035005/CC351 A
FILE No: 11035005CC351
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:04:23 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC351.dwg



1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100

METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
OVERALL ARRANGEMENT PLAN

PLAN No: 11035005/CC352 A

FILE No: 11035005CC352

SHEET SIZE: A1 ORIGINAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:

DATUM:

ORIGIN:

Plotted: 2 November , 2018 10:04:38 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC352.dwg

LEGEND

SCOUR PROTECTION TYPE 1
REFER TO SHEET CC376 AND CC377
FOR DETAILS

PAVEMENT (SHARED FOOTPATH)
CONCRETE (mm) = 125
SL82 MESH WITH 35mm TOP COVER

PAVEMENT (GPT ACCESS)
CONCRETE (mm) = 150
SL82 MESH WITH 35mm TOP COVER

POCKET PARK
LANDSCAPE ARCHITECT'S SPECIFICATIONS

CHANNEL PLANTING
PLANTING TO LANDSCAPE ARCHITECT'S
SPECIFICATIONS

NOTES:
1) ALL FOOTPATHS AND SHARED PATHS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH BLACKTOWN COUNCIL'S PATH PAVING POLICY

1:750 (AT A1)

15 7.5 0 7.5 15 22.5 30 37.5 45 525. 60 67.5 75
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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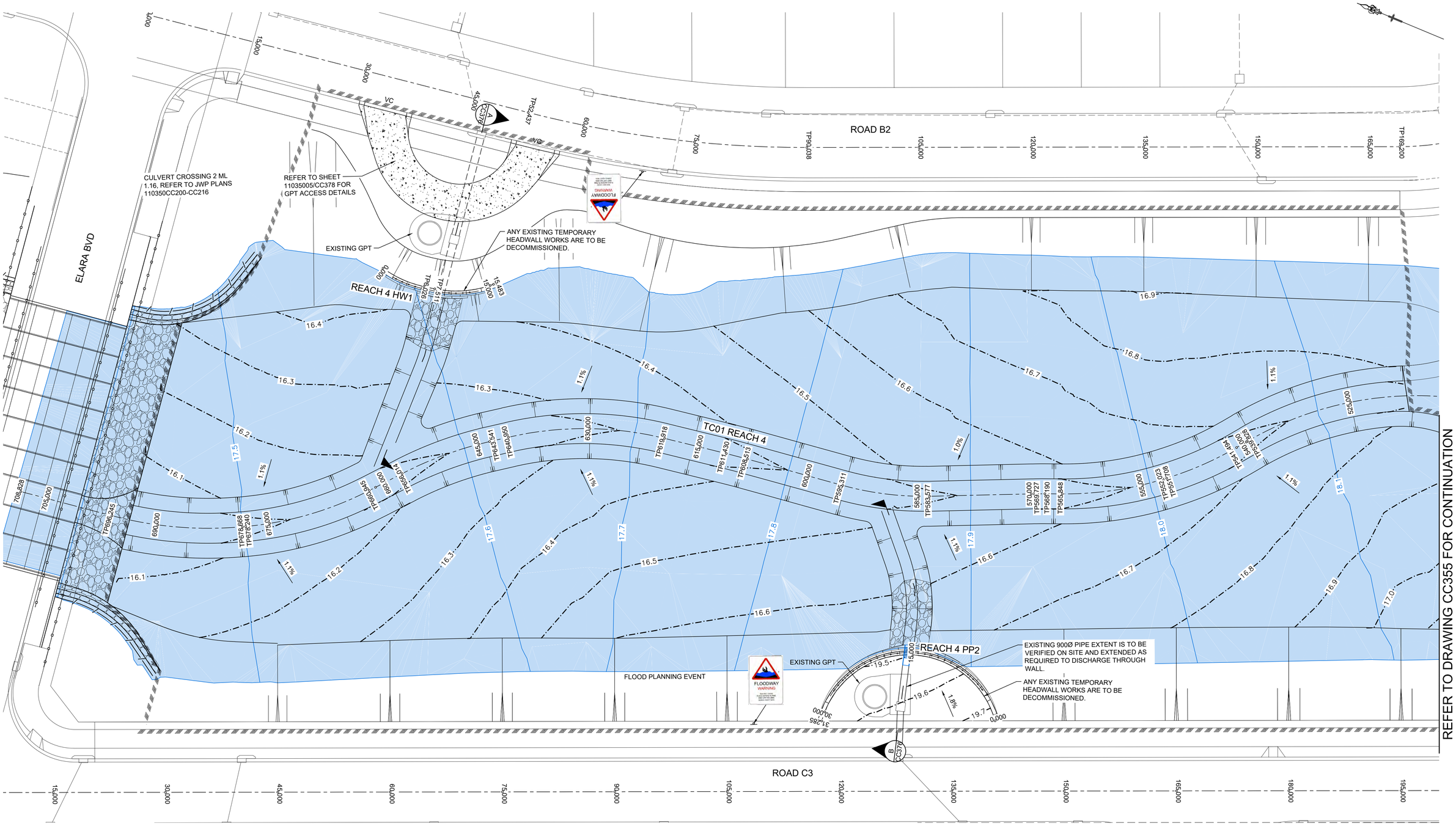
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
PAVEMENT AND GROUND COVER PLAN

PLAN No: 11035005/CC353 A
FILE No: 11035005CC353
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:04:58 AM File Name : J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC353.dwg



1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN:

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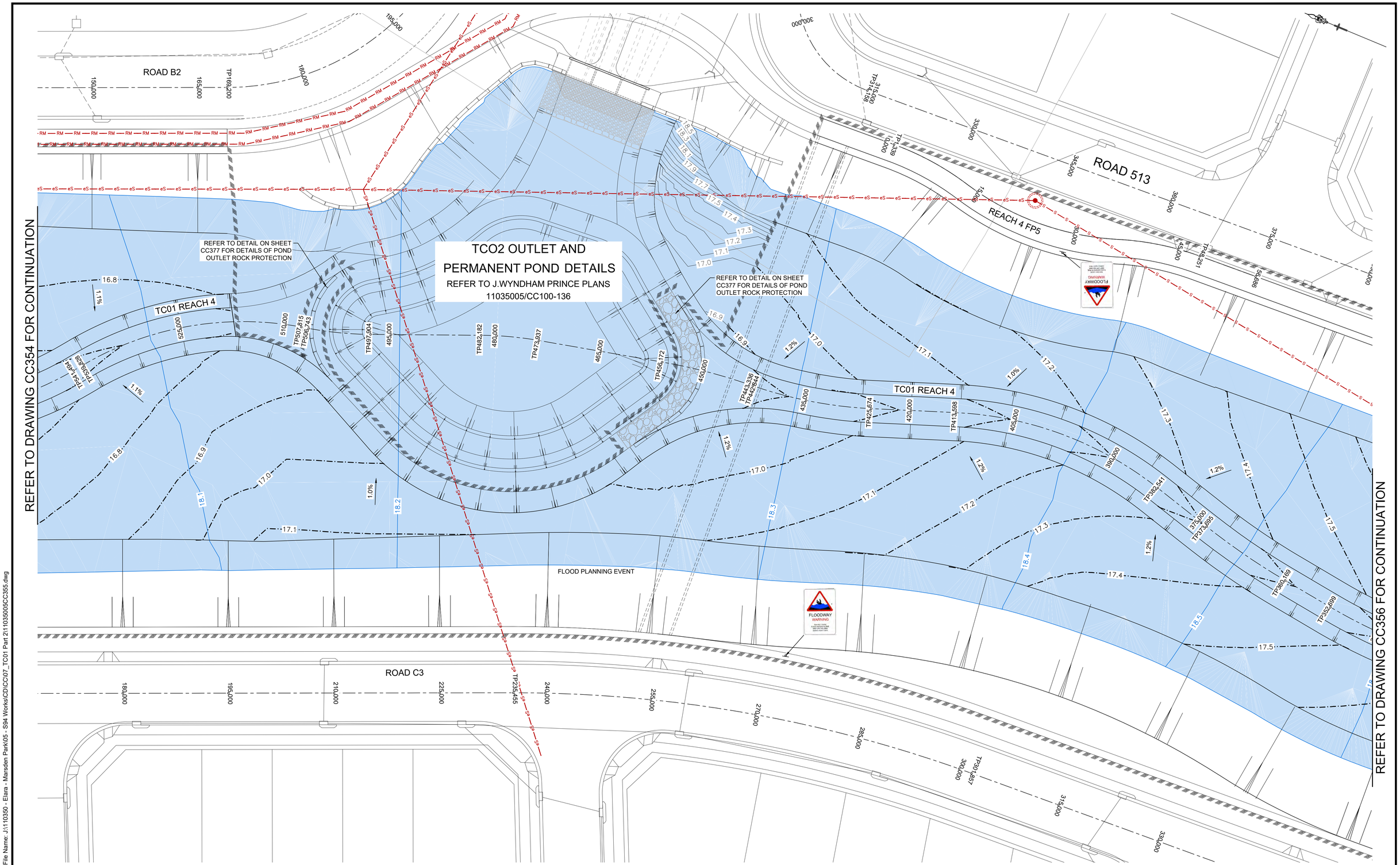
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
ENGINEERING PLAN
SHEET 1

PLAN No: 11035005/CC354 A
FILE No: 11035005CC354
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:05:28 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC354.dwg



1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

CLIENT:

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A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
CHANNEL TC01 - PART 2
ENGINEERING PLAN
SHEET 2

PLAN No: 11035005/CC355 A
FILE No: 11035005CC355
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:05:58 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC07_TC01 Part 2\11035005CC355.dwg

REFER TO DRAWING CC355 FOR CONTINUATION

REACH 4 FP5

ROAD 513

REACH 4 FP3

FLOOD PLANNING EVENT

TC01 REACH 4

ANY EXISTING TEMPORARY HEADWALL WORKS ARE TO BE DECOMMISSIONED.

REACH 4 PP6

EXISTING 900Ø PIPE EXTENT IS TO BE VERIFIED ON SITE AND EXTENDED AS REQUIRED TO DISCHARGE THROUGH WALL.

ROAD C3

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
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ORIGIN:

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
ENGINEERING PLAN
SHEET 3

PLAN No: 11035005/CC356 A
FILE No: 11035005CC356
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:06:31 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC07_TC01 Part 2\11035005CC356.dwg

REACH 4 GPT ACCESS 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296718.17	6269314.97	258°14'31.93"		
0.64	296717.55	6269314.84			
6.74	296711.7	6269316.58	286°35'41.92"		
13.14	296704.91	6269318.6		12	12.8
19.54	296703.4	6269325.52			
19.54	296703.4	6269325.52			
25.94	296701.9	6269332.45		12	12.8
32.34	296707.23	6269337.11	48°48'41.95"		
39.73	296712.79	6269341.98			
40.37	296713.42	6269342.09	80°15'41.28"		

REACH 4 GPT ACCESS 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296716.96	6269321.48	260°15'41.34"		
1.64	296715.34	6269321.2	260°15'41.34"		
2.68	296714.3	6269321.02		4.5	2.07
3.71	296713.29	6269321.32	286°35'41.92"		
3.88	296713.13	6269321.37	286°35'41.92"		
7.61	296709.17	6269322.55		7	7.46
11.35	296708.29	6269326.59			
11.35	296708.29	6269326.59			
15.08	296707.41	6269330.63		7	7.47
18.81	296710.52	6269333.35	48°48'41.74"		
19.21	296710.82	6269333.61	48°48'41.74"		
20.58	296711.87	6269334.53		5	2.74
21.95	296713.26	6269334.77	80°15'41.34"		
23.35	296714.64	6269335.01	80°15'41.34"		

REACH 4 FP3

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296802.73	6269028.21	175°54'08.98"		
6.75	296803.22	6269021.48	175°54'08.98"		
8	296803.3	6269020.23		40	2.5
9.25	296803.32	6269018.97	179°29'21.90"		
21.11	296803.42	6269007.11	179°29'21.90"		
45.7	296803.66	6268980.33		-50	49.18
70.29	296826.09	6268965.69	123°08'16.02"		
76.54	296831.32	6268962.27	123°08'16.02"		
80.79	296834.89	6268959.94		60	8.51
85.05	296838.1	6268957.13	131°15'59.75"		
91.79	296843.16	6268952.69	131°15'59.75"		

REACH 4 FP5

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296795.84	6269124.48	175°54'08.98"		
1.34	296795.93	6269123.14	175°54'08.98"		
7.28	296796.36	6269117.18		40	11.88
13.21	296795.02	6269111.35	192°54'51.11"		
24.79	296792.36	6269099.72		-39	23.16
36.37	296796.65	6269088.58	158°53'26.86"		
42.31	296798.81	6269083		40	11.88
48.25	296799.24	6269077.04	175°54'08.98"		
56.69	296799.84	6269068.62	175°54'08.98"		

REACH 4 HW 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296694.26	6269330.13	192°25'34.96"		
3.01	296693.6	6269327.14		-14	6.03
6.03	296694.25	6269324.15	167°45'50.83"		
7.51	296694.56	6269322.7	167°45'50.83"		
11.5	296695.43	6269318.7		-14	7.97
15.48	296698.32	6269315.79	135°08'07.53"		

REACH 4 PP2

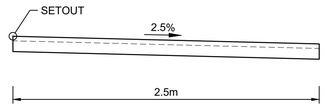
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296672.52	6269230.83	50°27'55.60"		
7.82	296679.58	6269236.66		-12	15.64
15.64	296675.83	6269245.01	335°46'42.42"		
23.46	296672.07	6269253.36		-12	15.64
31.28	296663.03	6269251.94	261°05'29.25"		

REACH 4 PP6

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296752.79	6268950.11	40°32'44.90"		
6.45	296757.53	6268955.66		-11	12.89
12.89	296754.26	6268962.19	333°24'02.73"		
19.34	296750.99	6268968.72		-11	12.89
25.78	296743.71	6268968.24	266°15'20.56"		

TC01 REACH 4

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
216.49	296821.8	6268926.96	289°54'47.83"		
224.13	296814.57	6268929.57		60	15.28
231.77	296808.24	6268933.93	304°30'23.18"		
242.65	296799.27	6268940.09	304°30'23.18"		
254.44	296789.37	6268946.89		50	23.57
266.22	296783.65	6268957.45	331°30'56.27"		
283.31	296775.5	6268972.46	331°30'56.27"		
290.36	296772.11	6268978.71		50	14.12
297.42	296770.6	6268985.65	347°41'39.97"		
302.16	296769.59	6268990.28	347°41'39.97"		
306	296768.77	6268994.03		-100	7.68
309.84	296767.67	6268997.71	343°17'37.50"		
322.45	296764.04	6269009.79	343°17'37.50"		
337.57	296759.63	6269024.48		75	30.25
352.7	296761.34	6269039.71	6°24'08.67"		
360.17	296762.17	6269047.14	6°24'08.67"		
366.93	296762.93	6269053.87		100	13.53
373.7	296764.59	6269060.44	14°09'09.51"		
382.54	296766.75	6269069.01	14°09'09.51"		
398.07	296770.67	6269084.57		-50	31.06
413.6	296764.81	6269099.51	338°33'47.13"		
425.67	296760.39	6269110.75	338°33'47.13"		
434.26	296757.24	6269118.8		60	17.17
442.84	296756.48	6269127.41	354°57'34.28"		
443.34	296756.43	6269127.9	354°57'34.28"		
449.75	296755.87	6269134.31		-80	12.84
456.17	296754.29	6269140.54	345°45'59.42"		
473.94	296749.92	6269157.76	345°45'59.42"		
478.06	296748.9	6269161.77		-50	8.25
482.18	296747.24	6269165.55	336°19'04.37"		
497.9	296740.93	6269179.95	336°19'04.37"		
502.32	296739.15	6269184.01		50	8.84
506.74	296738.11	6269188.31	346°26'46.61"		
507.82	296737.86	6269189.36	346°26'46.61"		
523.82	296733.94	6269205.61		-45	32.01
539.83	296720.36	6269215.36	305°41'09.97"		
541.49	296719.01	6269216.33	305°41'09.97"		
546.6	296714.84	6269219.32		45	10.21
551.71	296711.46	6269223.18	318°41'28.99"		
552.02	296711.25	6269223.41	318°41'28.99"		
558.94	296706.65	6269228.65		45	13.83
565.85	296703.85	6269235.03	336°17'39.38"		
568.19	296702.91	6269237.17	336°17'39.38"		
568.96	296702.6	6269237.87		-50	1.54
569.73	296702.27	6269238.57	334°31'59.42"		
583.58	296696.31	6269251.07	334°31'59.42"		
589.44	296693.77	6269256.41		40	11.73
595.31	296692.88	6269262.25	351°20'31.41"		
608.51	296690.89	6269275.3	351°20'31.41"		
609.97	296690.67	6269276.74		-100	2.92
611.43	296690.41	6269278.18	349°40'13.83"		
619.92	296688.89	6269286.53	349°40'13.83"		
630.43	296686.97	6269297.07		-45	21.03
640.95	296680.51	6269305.61	322°53'32.04"		
643.54	296678.94	6269307.68	322°53'32.04"		
649.78	296675.16	6269312.67		-50	12.47
656.01	296670.26	6269316.59	308°35'59.52"		
660.95	296666.41	6269319.66	308°35'59.52"		
669.59	296659.57	6269325.12		45	17.3
678.24	296655.27	6269332.75	330°37'14.08"		
678.67	296655.06	6269333.13	330°37'14.08"		
687.46	296650.71	6269340.87		50	17.58
696.25	296649.28	6269349.63	350°45'44.60"		
708.83	296647.26	6269362.05	350°45'44.60"		



REACH 4 FP3 AND REACH 4 FP5

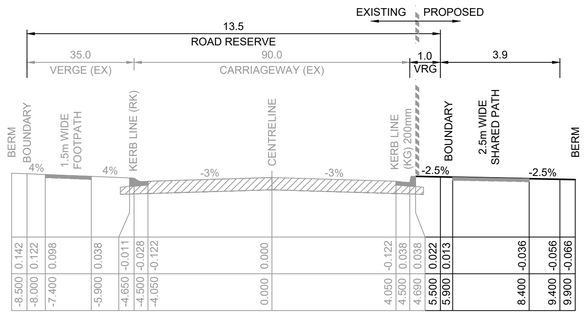
(SHARED PATH)

SCALE 1:25

ELEMENT	DESCRIPTION	PAVEMENT
REACH 4 FP3 AND REACH 4 FP5	SHARED PATH 2.5m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER

NOTE:

ALL PATHS ARE TO BE CONSTRUCTED TO BLACKTOWN CITY COUNCILS 'PATH PAVING POLICY 2009'



TYPICAL CROSS SECTION - PERIMETER ROAD

ROAD 513

1:100 NATURAL

1:25(AT A1) 500 0 500 1000 1500 2000 2500 MILLIMETRES

1:100 (AT A1) 1:200 (AT A3) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750

P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:

DATUM:

ORIGIN:

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS

CHANNEL TC01 - PART 2

SETOUT TABLES, FOOTPATH DETAILS AND TYPICAL ROAD SECTION

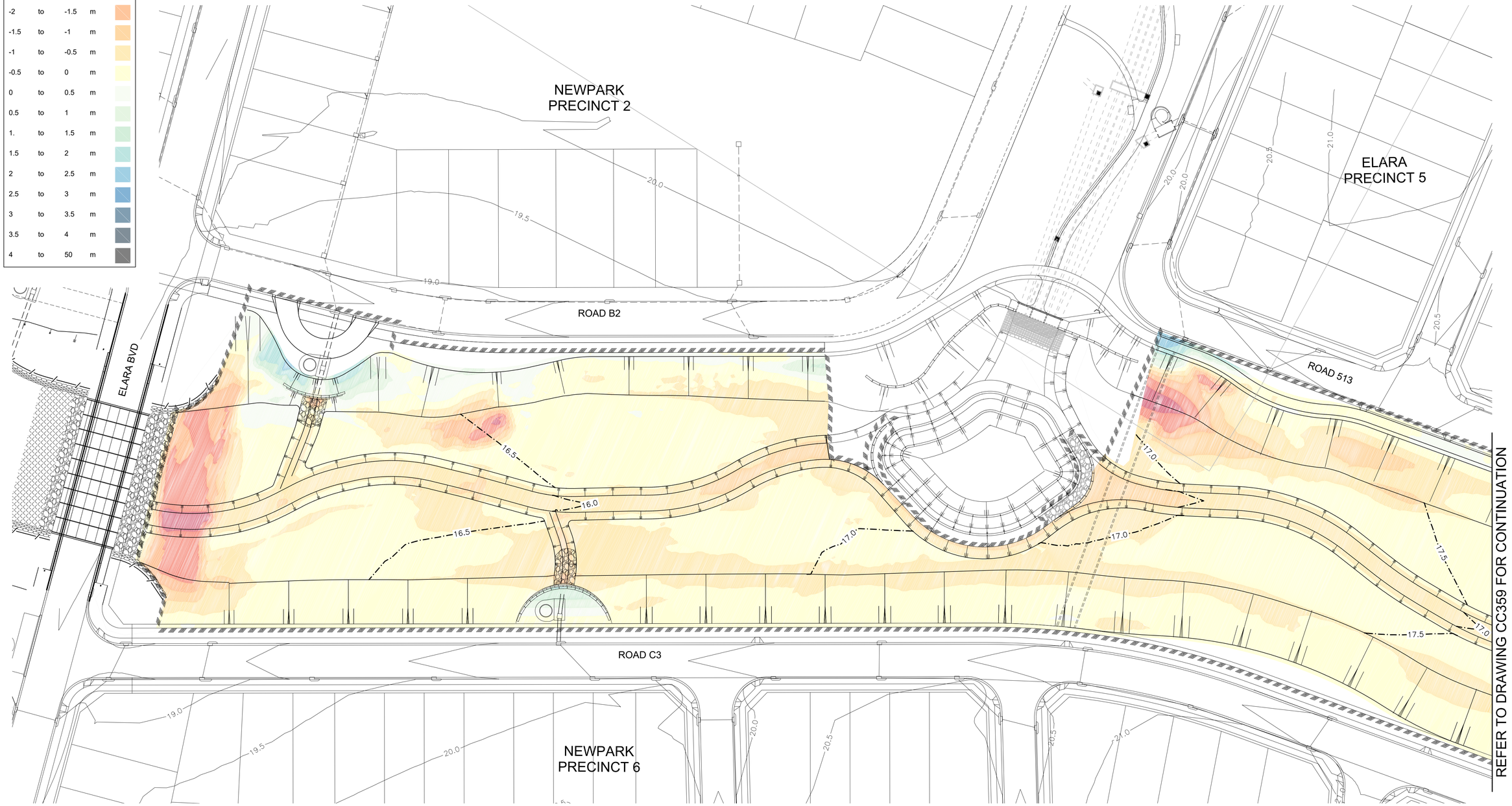
PLAN No: 11035005/CC357 A

FILE No: 11035005CC357

SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:06:40 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC357.dwg

LEGEND Lower_value		Upper_value		Colour
-50	to	-4	m	
-4	to	-3.5	m	
-3.5	to	-3	m	
-3	to	-2.5	m	
-2.5	to	-2	m	
-2	to	-1.5	m	
-1.5	to	-1	m	
-1	to	-0.5	m	
-0.5	to	0	m	
0	to	0.5	m	
0.5	to	1	m	
1.	to	1.5	m	
1.5	to	2	m	
2	to	2.5	m	
2.5	to	3	m	
3	to	3.5	m	
3.5	to	4	m	
4	to	50	m	



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

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	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
CHANNEL TC01 - PART 2
CUT / FILL PLAN
SHEET 1

PLAN No: 11035005/CC358 A
FILE No: 11035005CC358
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 10:07:02 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC358.dwg

LEGEND

Lower_value		Upper_value		Colour
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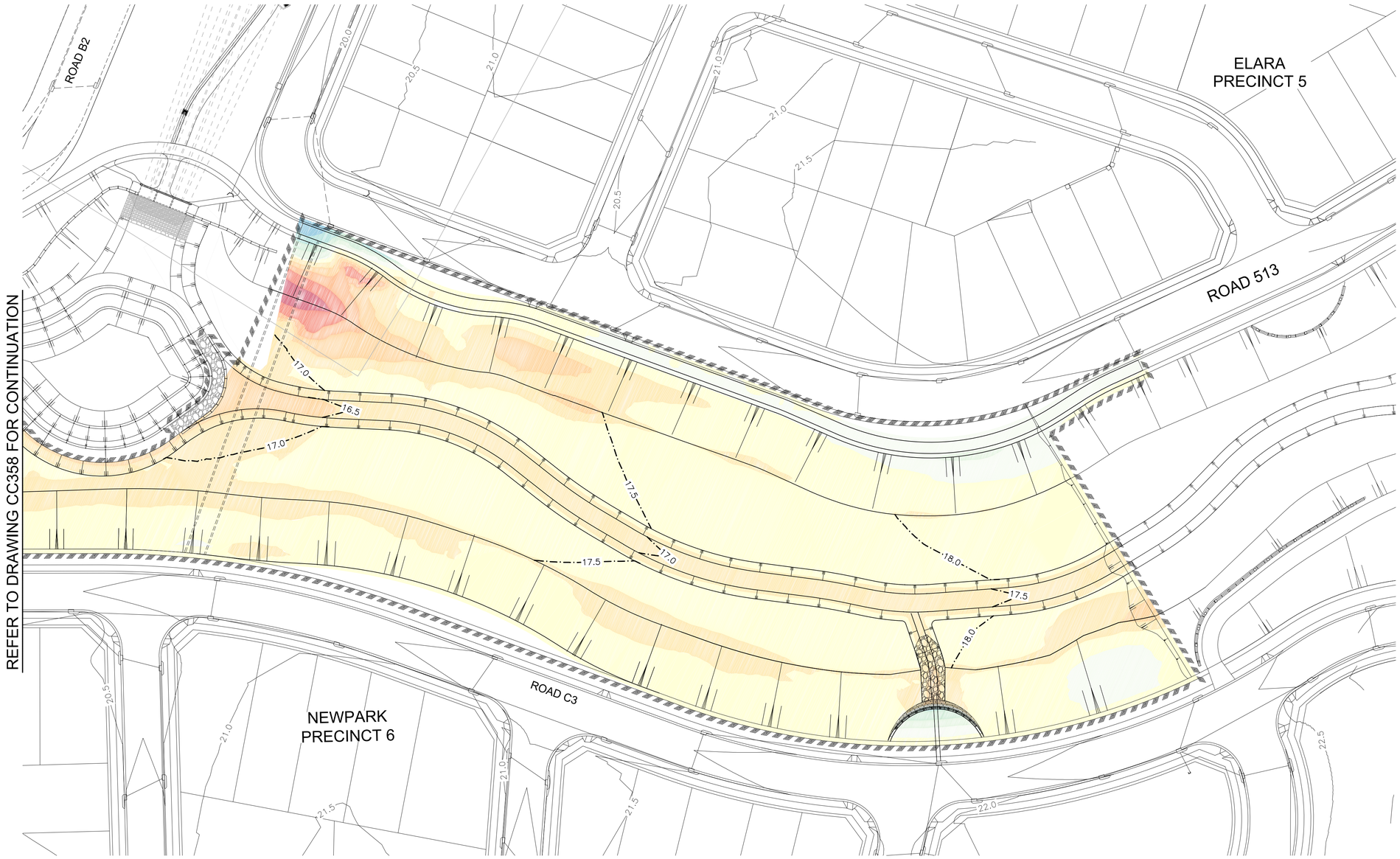
-4	to	-3.5	m	
-3.5	to	-3	m	
-3	to	-2.5	m	
-2.5	to	-2	m	
-2	to	-1.5	m	
-1.5	to	-1	m	
-1	to	-0.5	m	
-0.5	to	0	m	
0	to	0.5	m	
0.5	to	1	m	
1.	to	1.5	m	
1.5	to	2	m	
2	to	2.5	m	
2.5	to	3	m	
3	to	3.5	m	
3.5	to	4	m	
4	to	50	m	



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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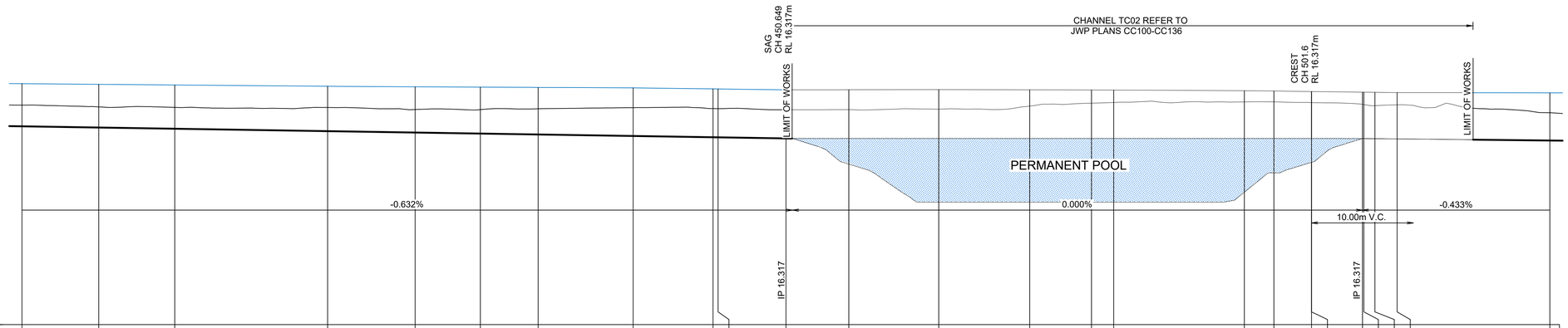
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
CHANNEL TC01 - PART 2
CUT / FILL PLAN
SHEET 2

PLAN No: 11035005/CC359 A
FILE No: 11035005CC359
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:07:24 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC359.dwg

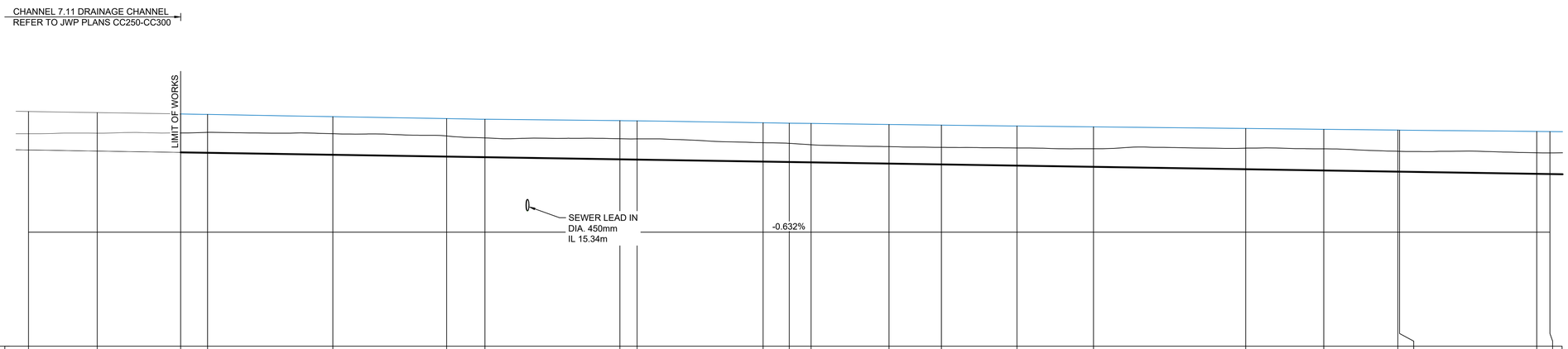


DATUM 9.0

DESIGN LINE GRADING	16.795	16.748	16.700	16.606	16.551	16.511	16.475	16.416	16.366	16.363	16.321	16.317	16.317	16.317	16.317	16.317	16.317	16.317	16.317	16.317	16.312	16.311	16.309	16.302	16.237
FLOOD PLANNING EVENT	18.472	18.446	18.419	18.370	18.350	18.336	18.325	18.308	18.266	18.264	18.229	18.233	18.237	18.230	18.225	18.221	18.198	18.182	18.164	18.164	18.138	18.137	18.132	18.121	18.114
EXISTING SURFACE	17.629	17.557	17.539	17.536	17.454	17.451	17.486	17.528	17.493	17.490	17.448	17.451	17.470	17.592	17.707	17.733	17.755	17.758	17.726	17.726	17.661	17.651	17.609	17.641	17.329
CHAINAGE	375.000	382.541	390.000	405.000	413.598	420.000	425.674	435.000	442.844	443.336	450.000	456.172	465.000	473.937	480.000	482.182	495.000	497.904	501.600	501.600	506.600	506.743	507.815	510.000	525.000

LONGITUDINAL SECTION TC01 REACH 4

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 10.0

DESIGN LINE GRADING	17.744	17.701	17.649	17.632	17.554	17.483	17.459	17.375	17.364	17.286	17.270	17.256	17.207	17.175	17.128	17.080	16.985	16.936	16.890	16.889	16.804	16.795
FLOOD PLANNING EVENT	19.261	19.218	19.166	19.147	19.058	18.981	18.955	18.901	18.895	18.818	18.802	18.791	18.752	18.725	18.690	18.656	18.591	18.559	18.528	18.527	18.476	18.472
EXISTING SURFACE	18.386	18.408	18.417	18.439	18.387	18.296	18.222	18.186	18.181	18.030	18.006	17.951	17.876	17.847	17.823	17.794	17.816	17.789	17.691	17.690	17.632	17.629
CHAINAGE	225.000	231.768	240.000	242.654	255.000	266.224	270.000	283.306	285.000	297.424	300.000	302.157	309.838	315.000	322.450	330.000	345.000	352.699	360.000	360.169	373.695	375.000

LONGITUDINAL SECTION TC01 REACH 4

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT:
Stockland

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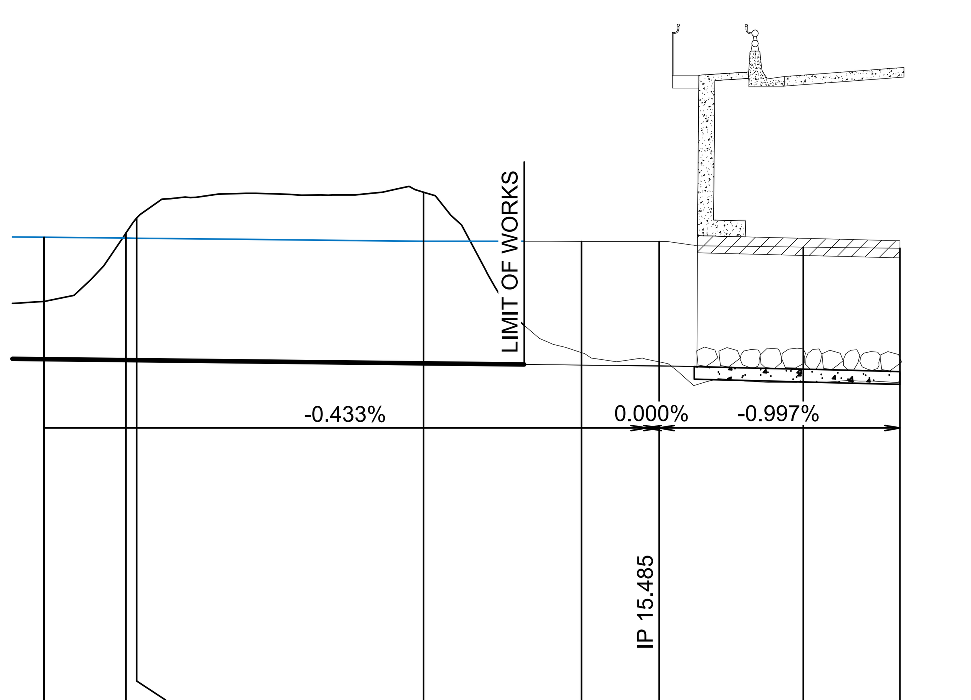
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
CHANNEL LONGITUDINAL SECTIONS
SHEET 1

PLAN No: 11035005/CC360 A
FILE No: 11035005CC360
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:07:35 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC360.dwg

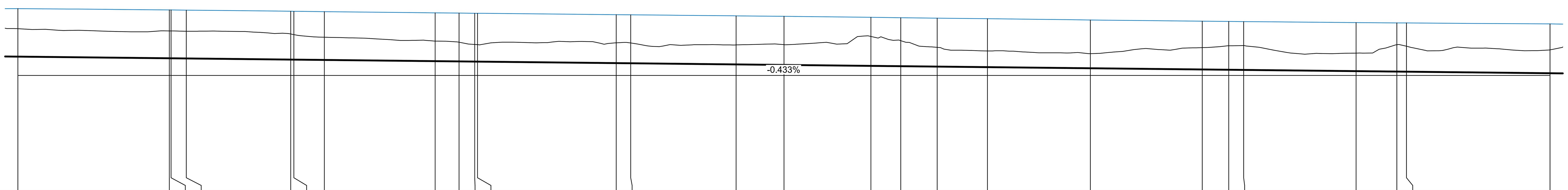
NEWPARK 7.11 CULVERT CROSSING
REFER TO JWP PLANS CC100-CC113



DATUM 10.0

DESIGN LINE GRADING	15.588	15.574	15.572	15.523	15.496	15.485	15.428	15.390
FLOOD PLANNING EVENT	17.515	17.501	17.500	17.453	17.449	17.447	17.360	17.341
EXISTING SURFACE	16.499	17.583	17.818	18.226	15.691	15.546	15.221	15.218
CHAINAGE	675.000	678.240	678.668	690.000	696.245	699.308	705.000	708.828

LONGITUDINAL SECTION TC01 REACH 4
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 11.0

DESIGN LINE GRADING	16.237	16.173	16.172	16.166	16.122	16.120	16.107	16.061	16.050	16.044	16.043	15.984	15.978	15.933	15.913	15.876	15.863	15.848	15.826	15.783	15.735	15.724	15.718	15.670	15.653	15.649	15.588
FLOOD PLANNING EVENT	18.114	18.063	18.062	18.056	18.011	18.010	17.995	17.949	17.939	17.933	17.932	17.878	17.873	17.832	17.813	17.773	17.760	17.743	17.719	17.670	17.624	17.614	17.608	17.569	17.556	17.553	17.515
EXISTING SURFACE	17.329	17.242	17.241	17.227	17.121	17.098	16.996	16.842	16.800	16.714	16.707	16.778	16.771	16.695	16.705	17.026	16.862	16.600	16.459	16.352	16.589	16.662	16.669	16.376	16.703	16.646	16.499
CHAINAGE	525.000	539.828	540.000	541.494	551.708	552.023	555.000	565.848	568.190	569.727	570.000	583.577	585.000	595.311	600.000	608.513	611.430	615.000	619.918	630.000	640.950	643.541	645.000	656.014	660.000	660.945	675.000

LONGITUDINAL SECTION TC01 REACH 4
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

CLIENT: Stockland

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	AMENDMENT	DES	DRN	CKD	APR	DATE

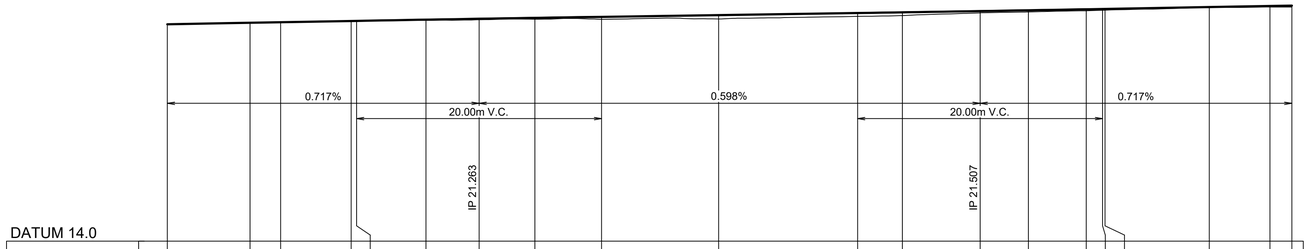
J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

ELARA S94 WORKS
CHANNEL TC01 - PART 2
CHANNEL LONGITUDINAL SECTIONS
SHEET 2

PLAN No: 11035005/CC361 A
FILE No: 11035005CC361
SHEET SIZE: A1 ORIGINAL

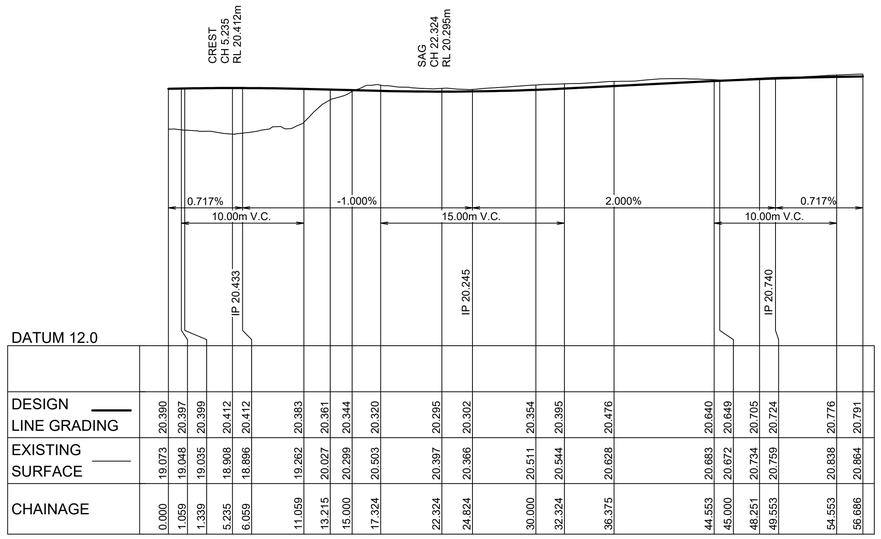
Plotted: 2 November , 2018 10:07:45 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC361.dwg



WAE																							
DESIGN LINE GRADING	21.080	21.129	21.147	21.188	21.191	21.231	21.260	21.289	21.323	21.380	21.448	21.470	21.510	21.537	21.569	21.579	21.580	21.642	21.677	21.690			
EXISTING SURFACE	21.096	21.131	21.145	21.197	21.201	21.213	21.227	21.246	21.240	21.254	21.336	21.365	21.451	21.481	21.520	21.540	21.543	21.629	21.645	21.644			
CHAINAGE	0.000	6.748	9.252	15.000	15.447	21.112	25.447	30.000	35.447	45.000	56.341	60.000	66.341	70.288	75.000	76.341	76.538	85.051	90.000	91.788			

LONGITUDINAL SECTION REACH 4 FP3

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DESIGN LINE GRADING	20.390	20.397	20.399	20.412	20.412	20.383	20.361	20.344	20.320	20.295	20.302	20.354	20.395	20.476	20.640	20.649	20.705	20.724	20.776	20.791			
EXISTING SURFACE	19.073	19.048	19.035	18.908	18.896	19.262	20.027	20.299	20.503	20.397	20.366	20.511	20.544	20.628	20.683	20.672	20.734	20.759	20.838	20.864			
CHAINAGE	0.000	1.059	1.339	5.235	6.059	11.059	13.215	15.000	17.324	22.324	24.824	30.000	32.324	36.375	44.553	45.000	48.251	49.553	54.553	56.686			

LONGITUDINAL SECTION REACH 4 FP5

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

1:250 (AT A1)
1:500 (AT A3)
5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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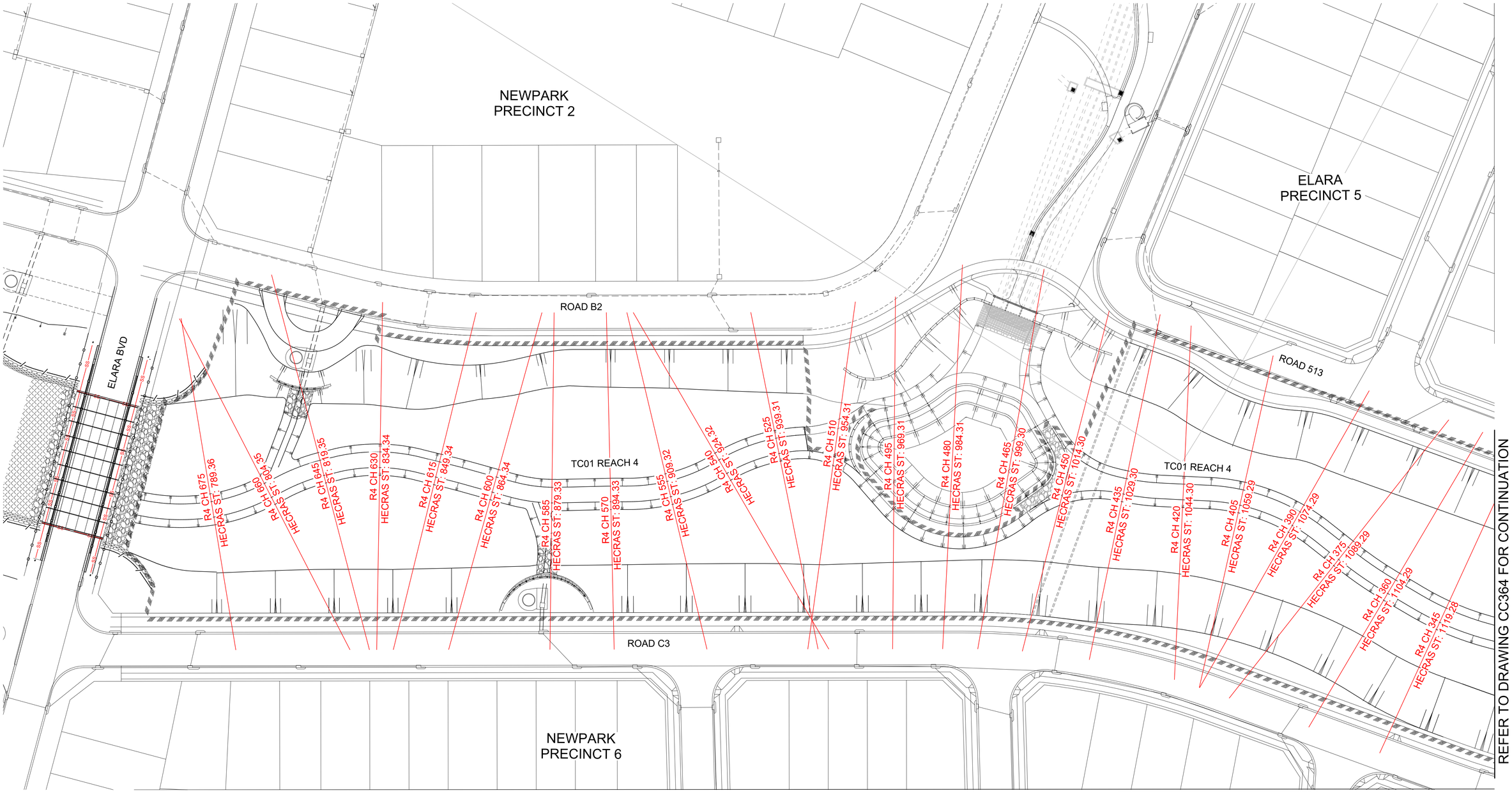
ELARA S94 WORKS
CHANNEL TC01 - PART 2
FOOTPATH LONGITUDINAL SECTIONS

PLAN No: 11035005/CC362 A
FILE No: 11035005CC362
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 10:07:55 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC362.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT:

Stockland

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ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS PLAN
SHEET 1

PLAN No: 11035005/CC363 A

FILE No: 11035005CC363

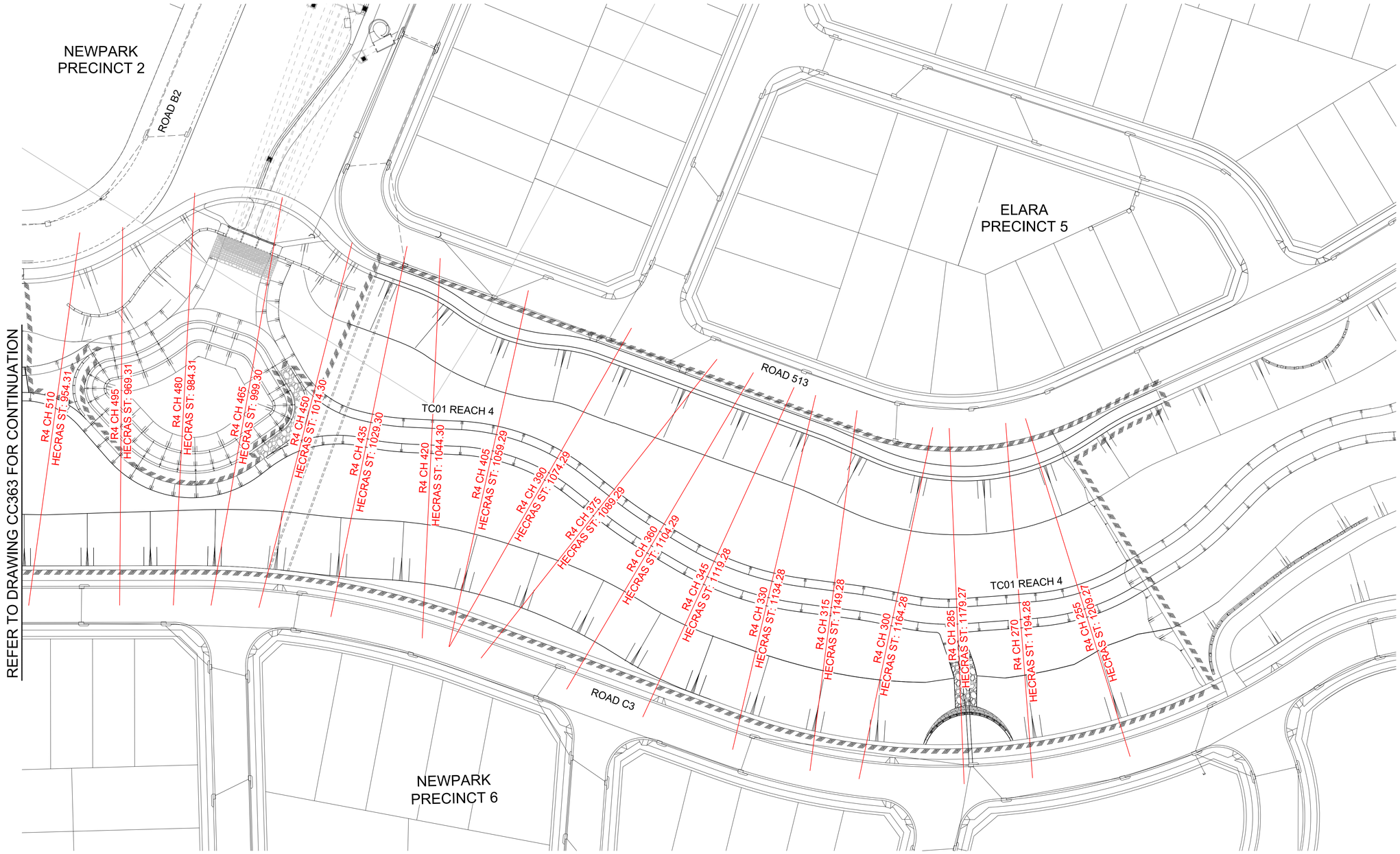
SHEET SIZE: A1 ORIGINAL

AZIMUTH:
DATUM:
ORIGIN:

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

Plotted: 2 November , 2018 10:08:14 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC363.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS PLAN
SHEET 2

PLAN No: 11035005/CC364 A

FILE No: 11035005CC364

SHEET SIZE: A1 ORIGINAL

AZIMUTH:
DATUM:
ORIGIN:

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
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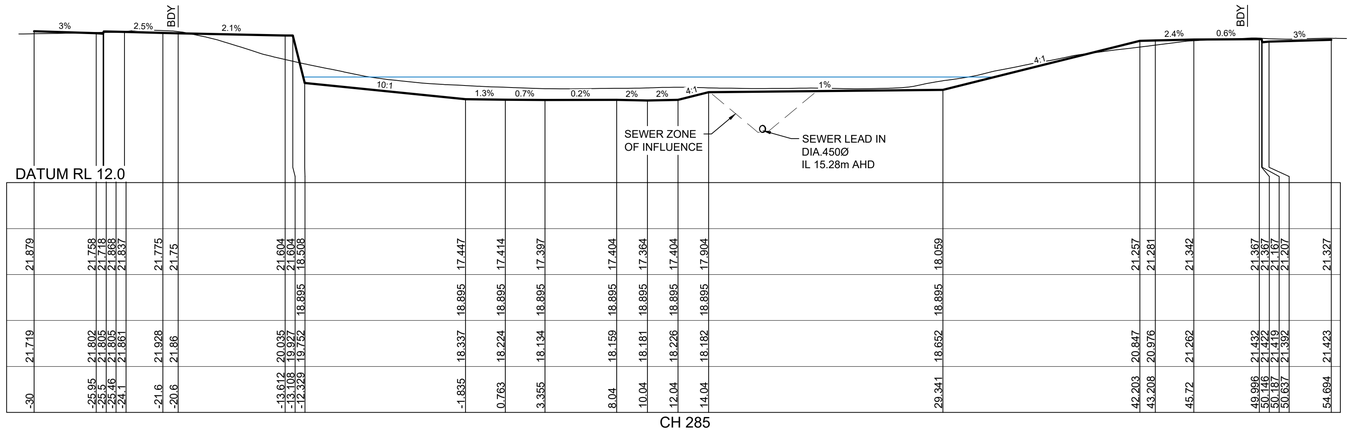
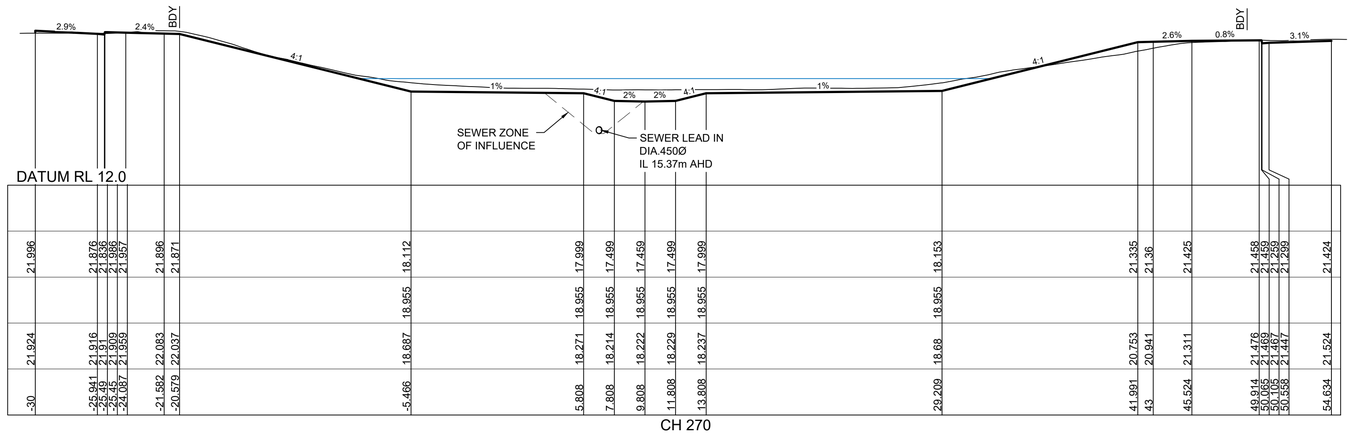
A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

Plotted: 2 November , 2018 10:08:34 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC364.dwg



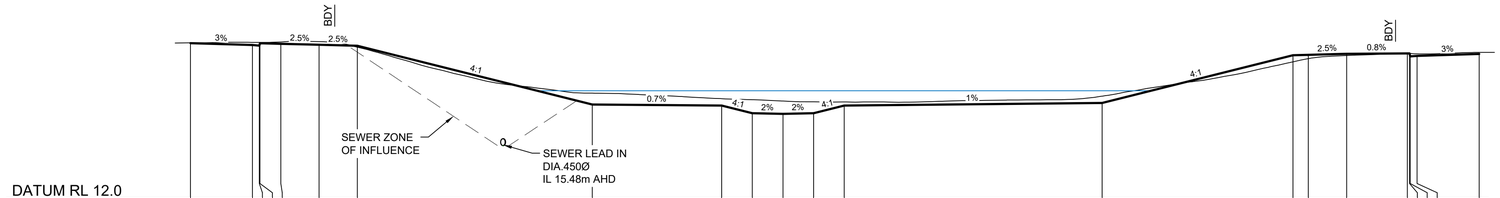
21.879	21.758	21.749	21.688	21.837	21.775	21.75	21.604	21.604	21.604	18.308	17.447	17.414	17.397	17.404	17.364	17.404	17.904	18.059	21.257	21.281	21.342	21.367	21.367	21.367	21.167	21.207	21.327
21.719	21.802	21.805	21.805	21.861	21.928	21.86	20.035	19.927	19.927	18.895	18.895	18.895	18.895	18.895	18.895	18.895	18.895	18.895	20.847	20.976	21.262	21.432	21.422	21.422	21.419	21.392	21.423
-30	-25.95	-25.5	-25.46	-24.1	-21.6	-20.6	-13.612	-13.108	-12.329	-1.835	18.337	18.224	18.134	18.159	18.181	18.226	18.182	18.652	42.203	43.208	45.72	49.996	50.446	50.187	50.187	50.637	54.694

CH 285



21.996	21.876	21.836	21.986	21.957	21.896	21.871	18.112				17.999	17.499	17.459	17.499	17.999			18.153	21.335	21.36	21.425	21.458	21.459	21.459	21.259	21.299	21.424
21.924	21.916	21.91	21.909	21.959	22.083	22.037	18.955	18.955	18.955	18.955	18.955	18.955	18.955	18.955	18.955	18.955	18.955	18.955	20.753	20.941	21.311	21.476	21.469	21.467	21.467	21.447	21.524
-30	-25.941	-25.49	-25.45	-24.087	-21.582	-20.579	-5.466	18.687	18.271	18.214	5.808	7.808	9.808	11.808	13.808	18.229	18.237	29.209	41.991	43	45.524	49.914	50.065	50.195	50.195	50.558	54.634

CH 270



DESIGN SURFACE LEVEL	22.165	22.043	22.043	22.153	22.123	22.06	21.997	18.156			18.094	17.594	17.554	17.594	18.094			18.262	21.378	21.403	21.466	21.498	21.498	21.498	21.298	21.338	21.458
FLOOD PLANNING EVENT								19.058	19.058	19.058	19.058	19.058	19.058	19.058	19.058	19.058	19.058	19.058											
EXISTING SURFACE LEVEL	22.192	22.217	22.217	22.213	22.244	22.263	21.901	18.902	18.541	18.476	18.387	18.333	18.328	18.328	18.706				20.944	21.154	21.357	21.495	21.494	21.487	21.487	21.487	21.562
OFFSET	-30	-25.95	-25.5	-25.46	-24.1	-21.6	-19.099	-3.759	4.692	6.692	8.692	10.692	12.692	29.532					41.996	42.997	45.5	49.459	49.609	49.649	50.1	50.1	54.152

CH 255

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

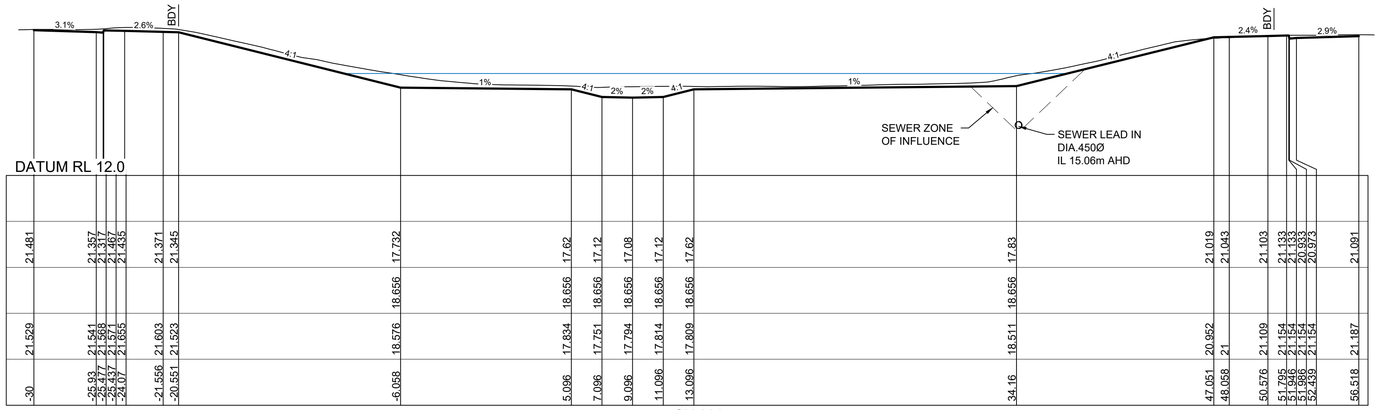
ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 1

PLAN No: 11035005/CC365 A

FILE No: 11035005CC365

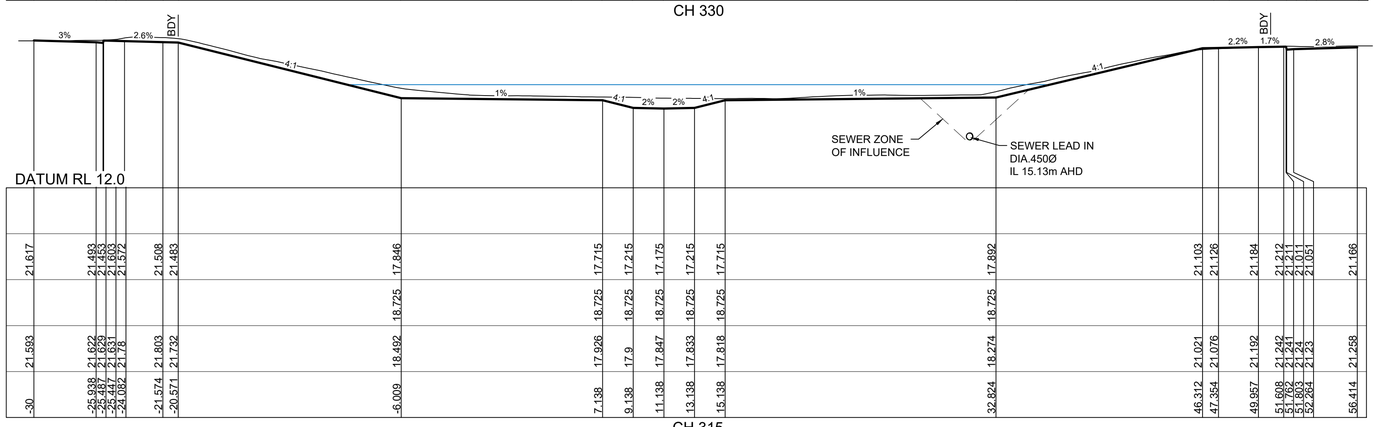
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:08:43 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC07_TC01 Part 2\11035005CC365.dwg



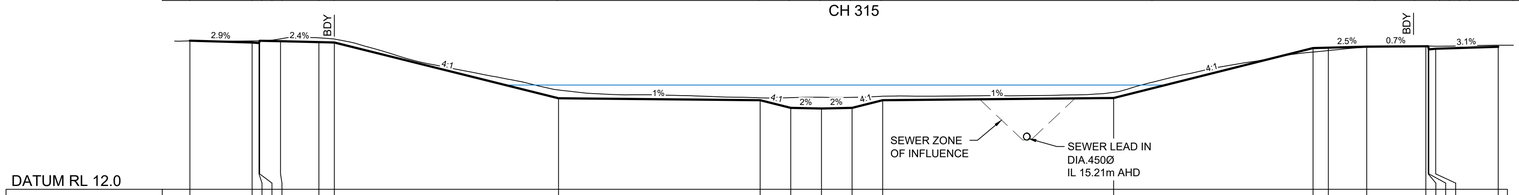
21.481	21.357	21.317	21.467	21.435	21.371	21.345	17.732	17.62	17.12	17.08	17.12	17.62	17.83	21.019	21.043	21.103	21.133	21.133	21.043	20.973	21.091
18.656	18.656	18.656	18.656	18.656	18.656	18.656	18.656	18.656	18.656	18.656	18.656	18.656	18.656								
21.529	21.541	21.568	21.571	21.655	21.603	21.523	18.576	17.834	17.751	17.794	17.814	17.809	18.511	20.952	21	21.109	21.154	21.154	21.154	21.154	21.187
-30	-25.93	-25.477	-24.47	-24.07	-21.556	-20.551	-6.058	5.096	7.096	9.096	11.096	13.096	34.16	47.051	48.058	50.576	51.795	51.946	51.996	52.439	56.518

CH 330



21.617	21.493	21.453	21.603	21.572	21.508	21.483	17.846	17.715	17.215	17.175	17.215	17.715	17.892	21.103	21.126	21.184	21.212	21.211	21.101	21.051	21.166
18.725	18.725	18.725	18.725	18.725	18.725	18.725	18.725	18.725	18.725	18.725	18.725	18.725	18.725								
21.593	21.622	21.623	21.621	21.78	21.803	21.732	18.492	17.926	17.9	17.847	17.833	17.818	18.274	21.021	21.076	21.192	21.242	21.241	21.23	21.23	21.258
-30	-25.938	-25.487	-24.487	-24.082	-21.574	-20.571	-6.009	7.138	9.138	11.138	13.138	15.138	32.824	46.312	47.354	49.957	51.608	51.806	51.903	52.284	56.414

CH 315



DESIGN SURFACE LEVEL	21.701	21.592	21.542	21.604	21.663	21.602	21.578	17.941	17.81	17.31	17.27	17.31	17.81	17.96	21.217	21.242	21.305	21.333	21.333	21.193	21.173	21.298
FLOOD PLANNING EVENT	18.802	18.802	18.802	18.802	18.802	18.802	18.802	18.802	18.802	18.802	18.802	18.802	18.802	18.802								
EXISTING SURFACE LEVEL	21.681	21.681	21.69	21.692	21.817	21.885	21.805	18.48	17.967	17.979	18.006	17.998	18.072	18.329	20.957	21.054	21.265	21.361	21.350	21.337	21.338	21.401
OFFSET	-30	-25.937	-25.486	-24.486	-24.081	-21.573	-20.57	-5.925	7.241	9.241	11.241	13.241	15.241	30.318	43.342	44.342	46.843	50.705	50.857	50.897	51.135	55.432

CH 300

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 2

PLAN No: 11035005/CC366 A

FILE No: 11035005CC366

SHEET SIZE: A1 ORIGINAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

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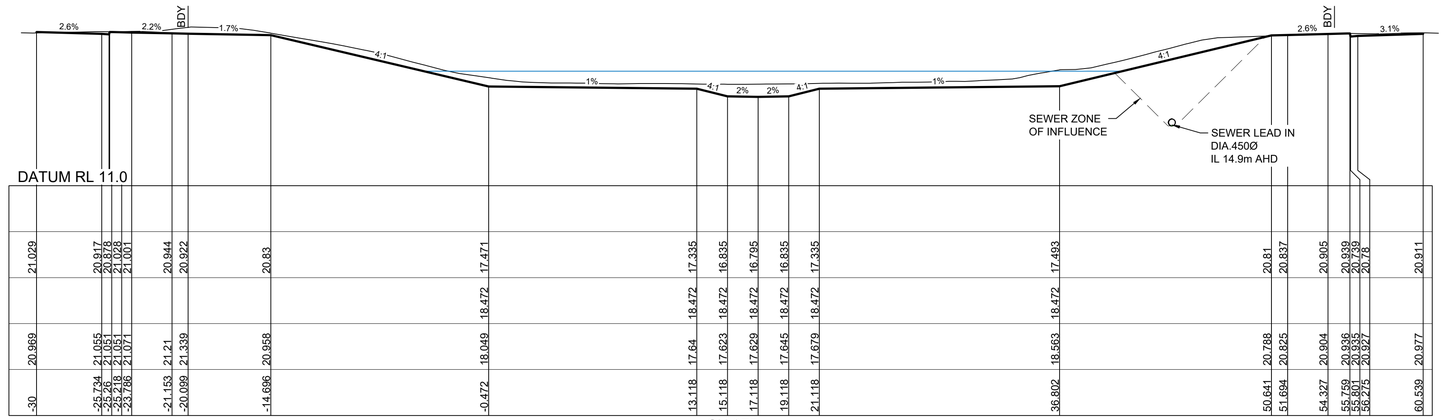
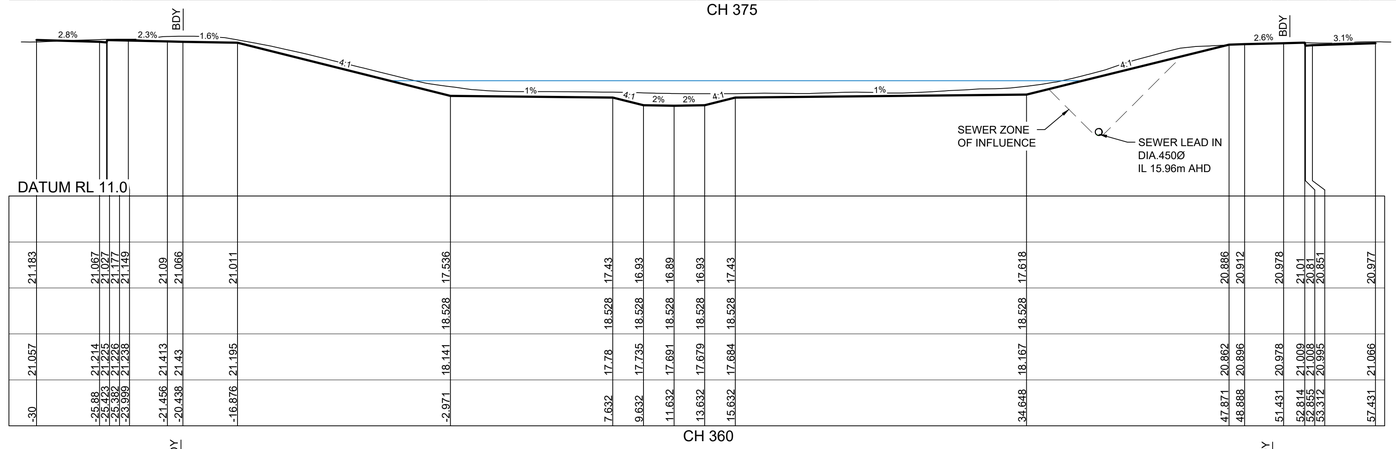
AZIMUTH:

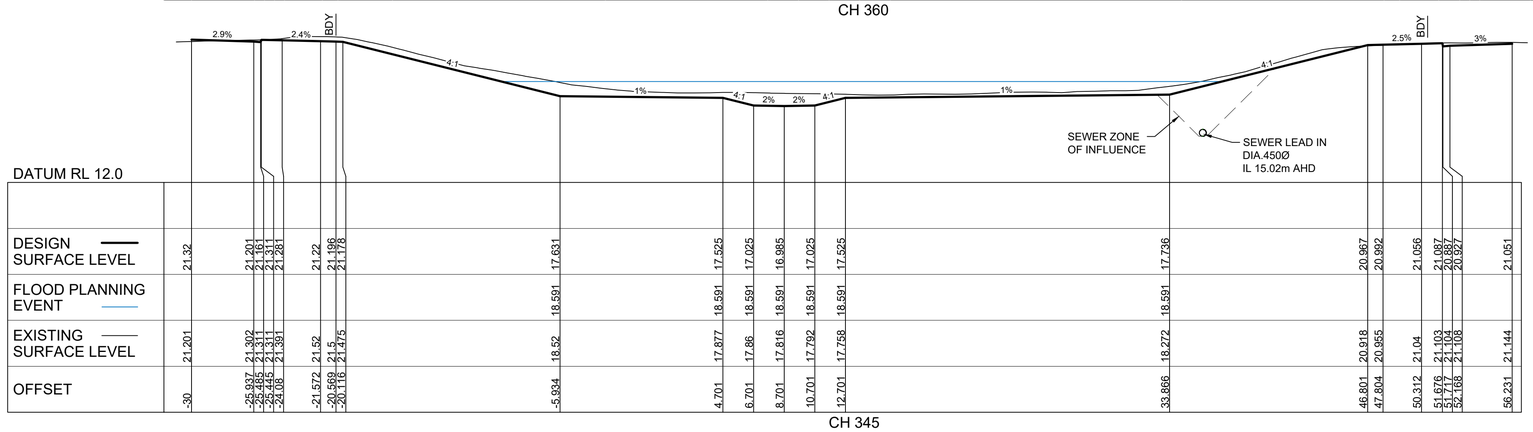
DATUM:

ORIGIN:

Plotted: 2 November , 2018 10:08:51 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC366.dwg







1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 3

PLAN No: 11035005/CC367 A

FILE No: 11035005CC367

SHEET SIZE: A1 ORIGINAL

AZIMUTH:

DATUM:

ORIGIN:

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
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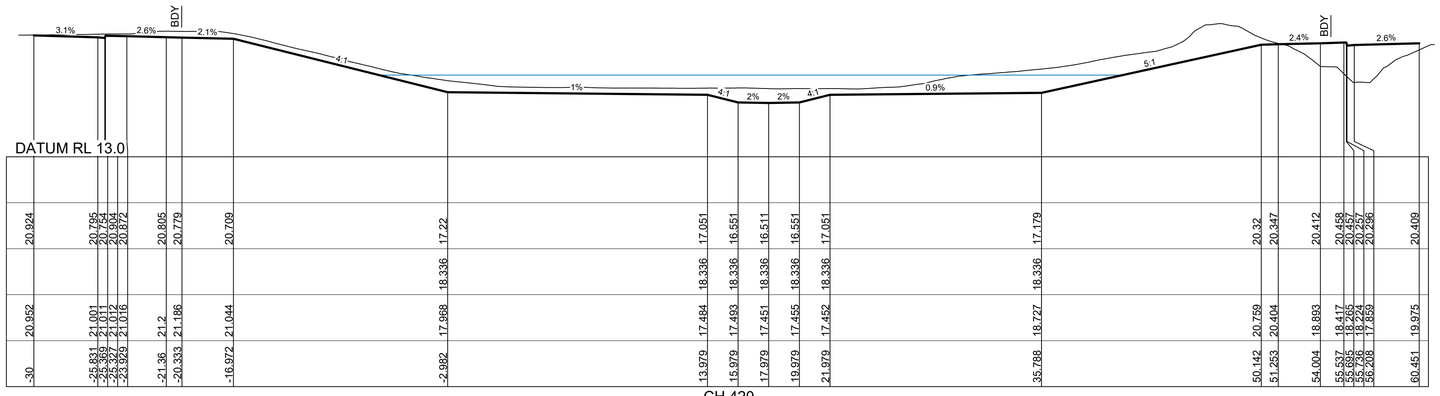
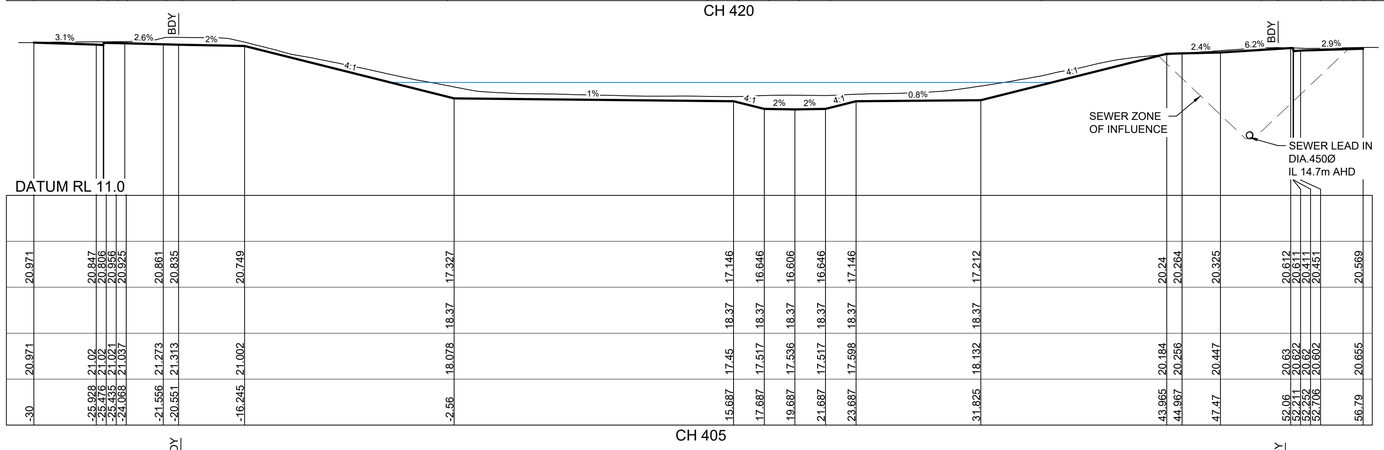
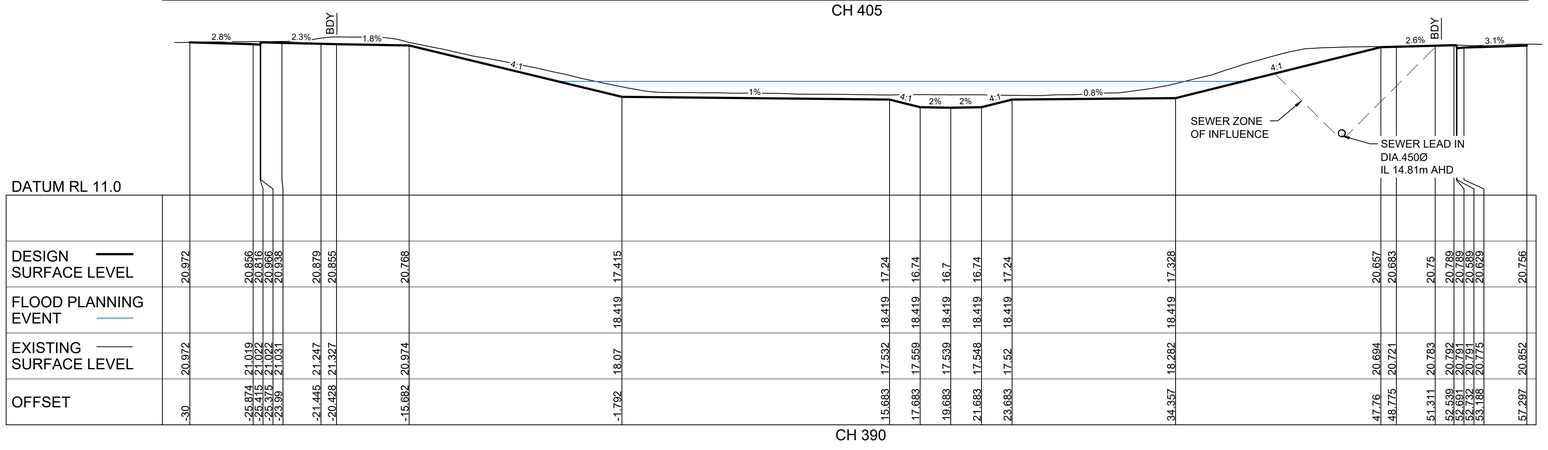
A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

Plotted: 2 November , 2018 10:09:00 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC367.dwg







1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

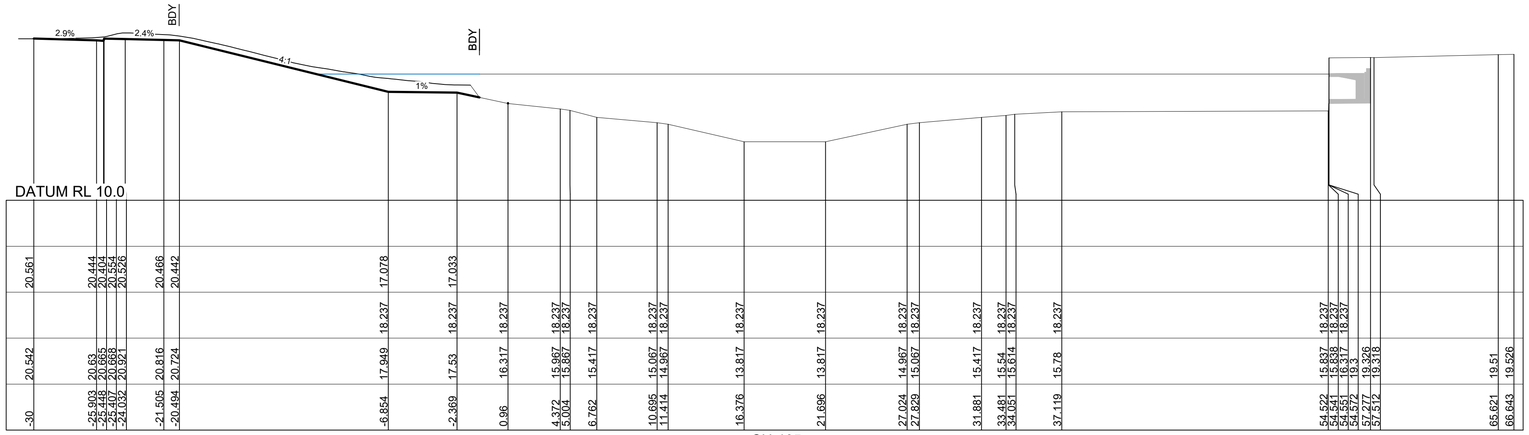
ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 4

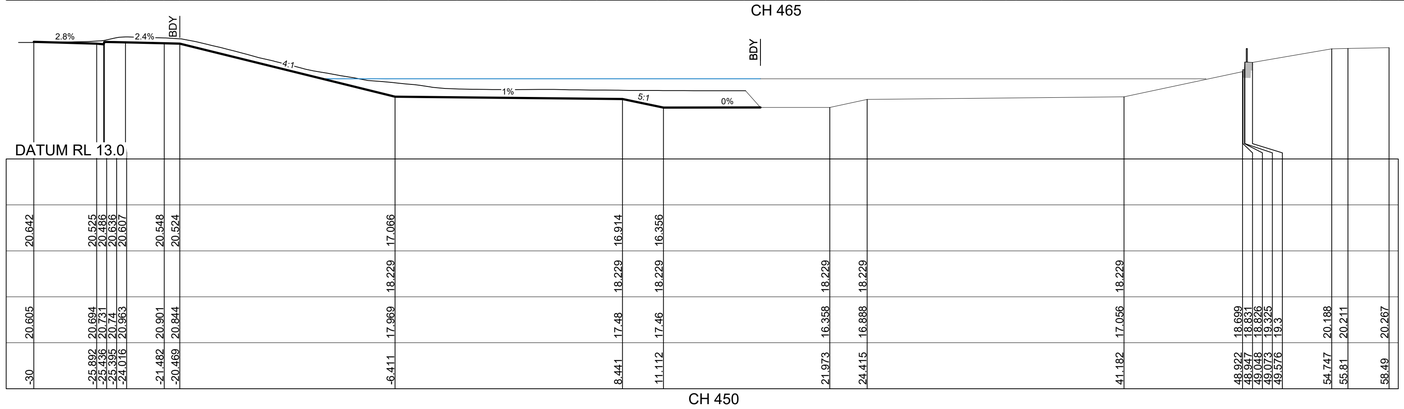
PLAN No: 11035005/CC368 A

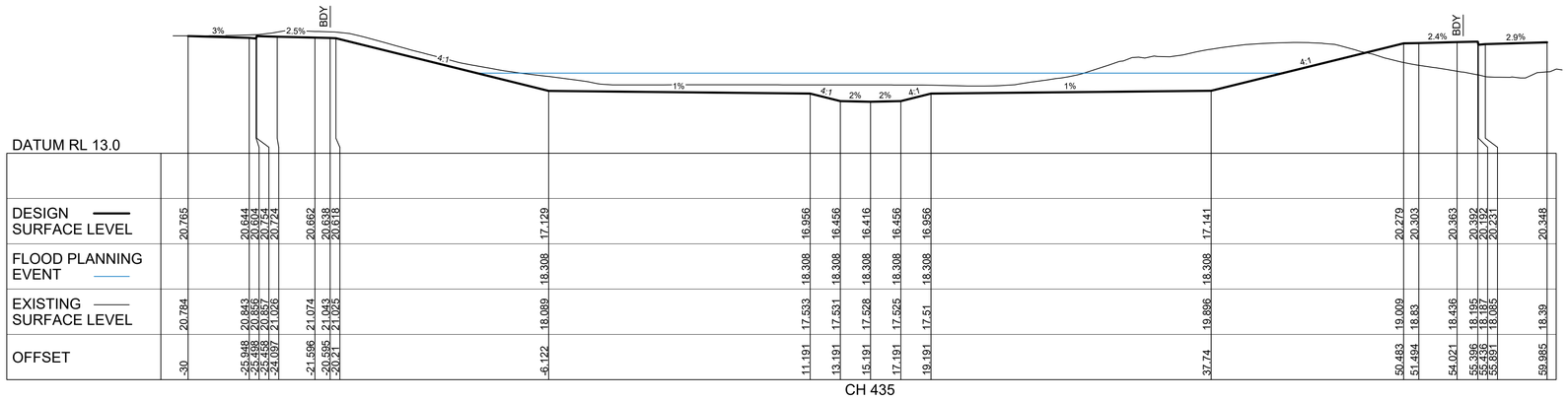
FILE No: 11035005CC368

SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:09:09 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC368.dwg







1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

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ORIGIN:

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

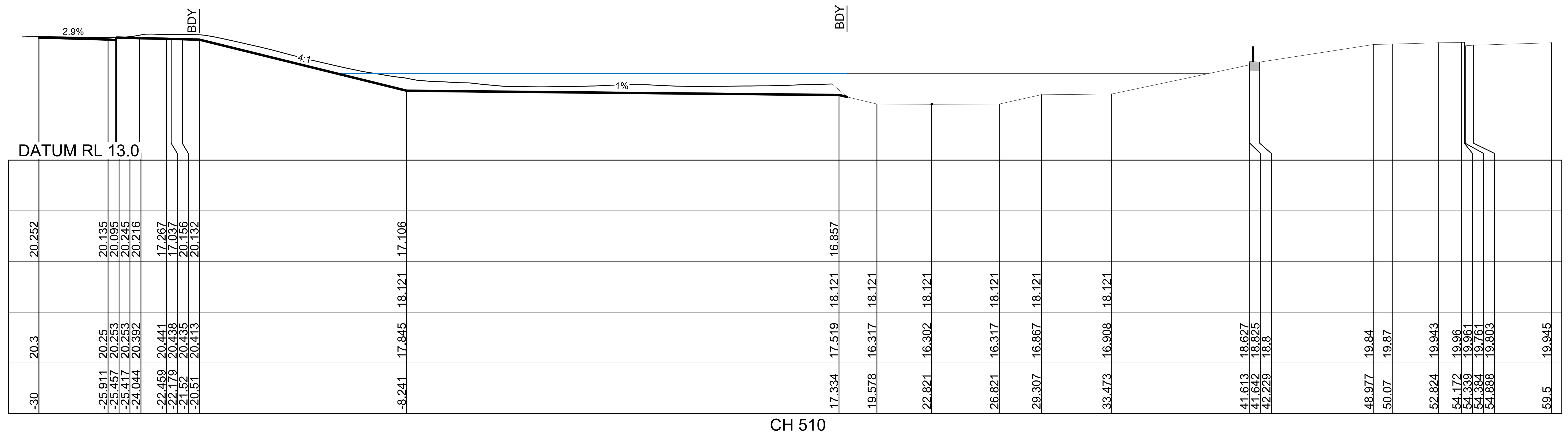
ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 5

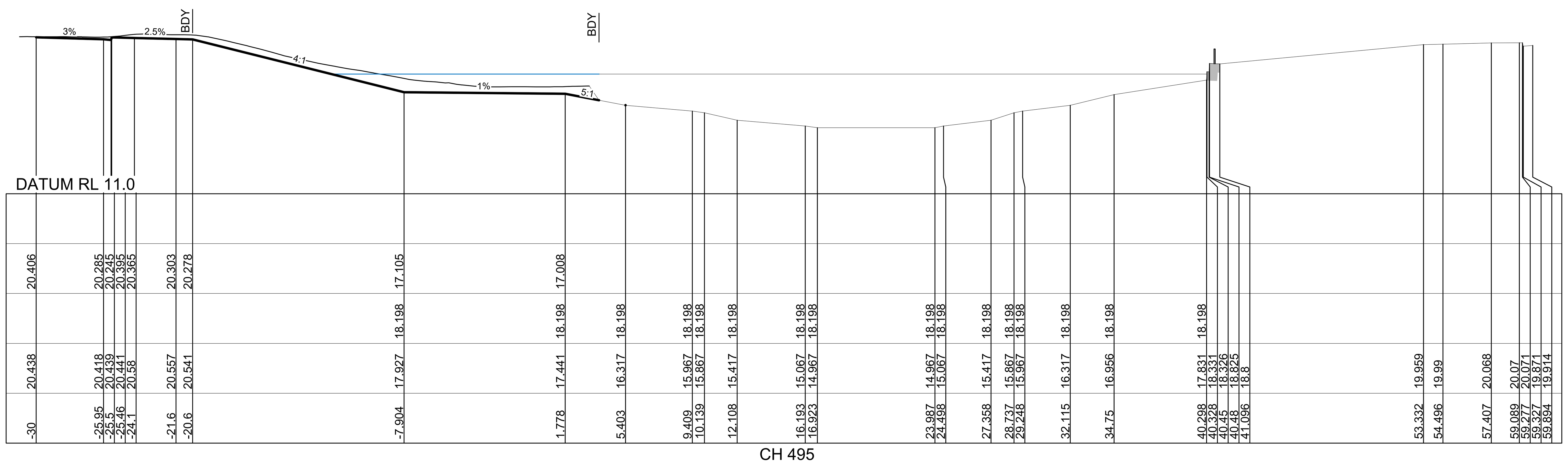
PLAN No: 11035005/CC369 A

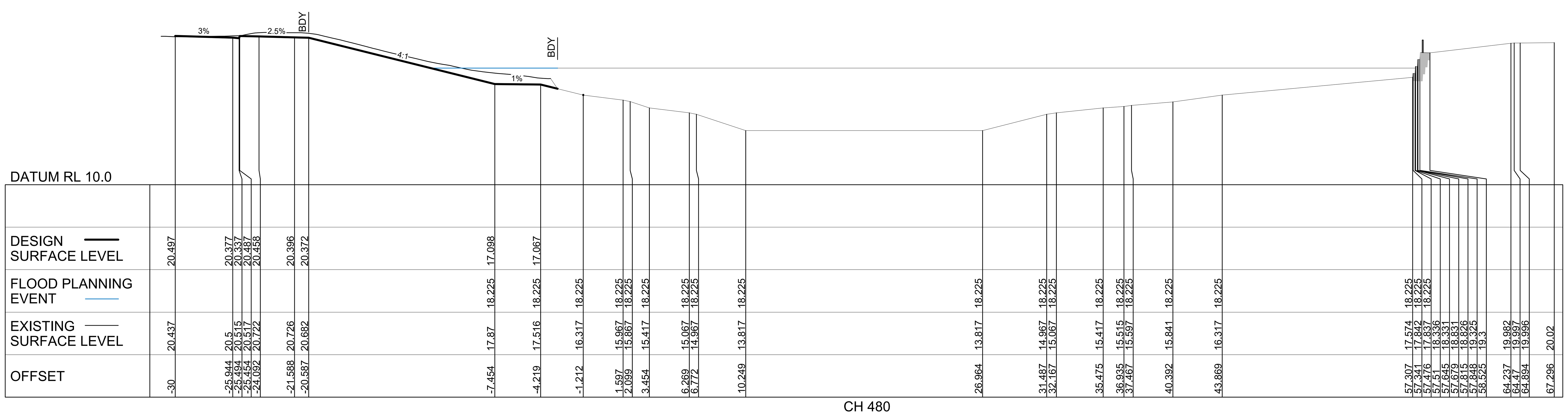
FILE No: 11035005CC369

SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:09:18 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC369.dwg







1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

Plotted: 2 November , 2018 10:09:26 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC370.dwg

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

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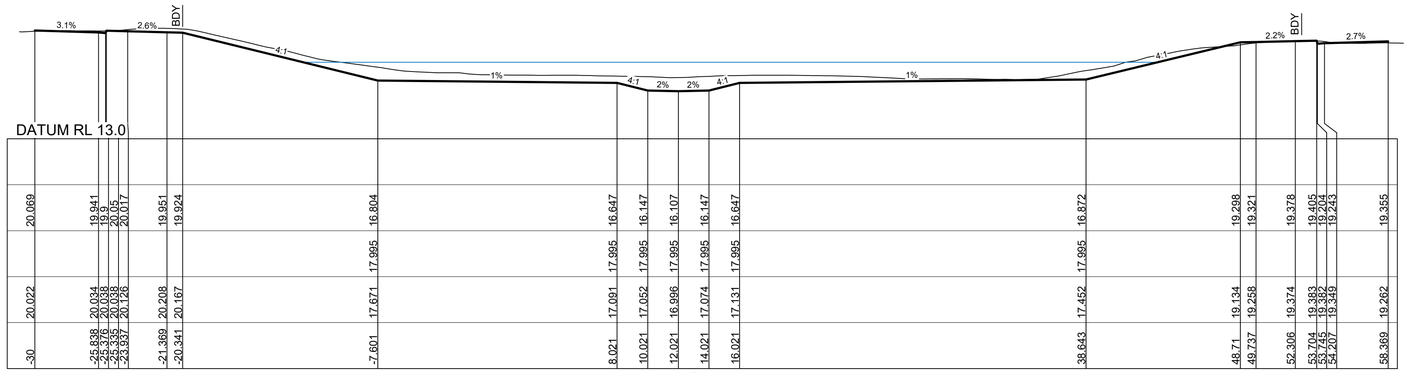
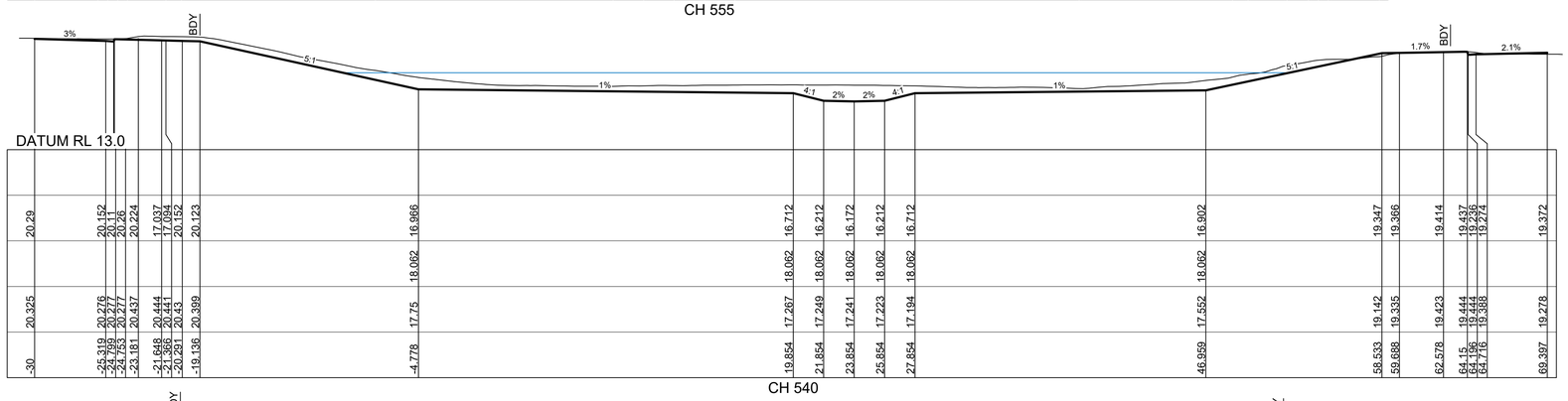
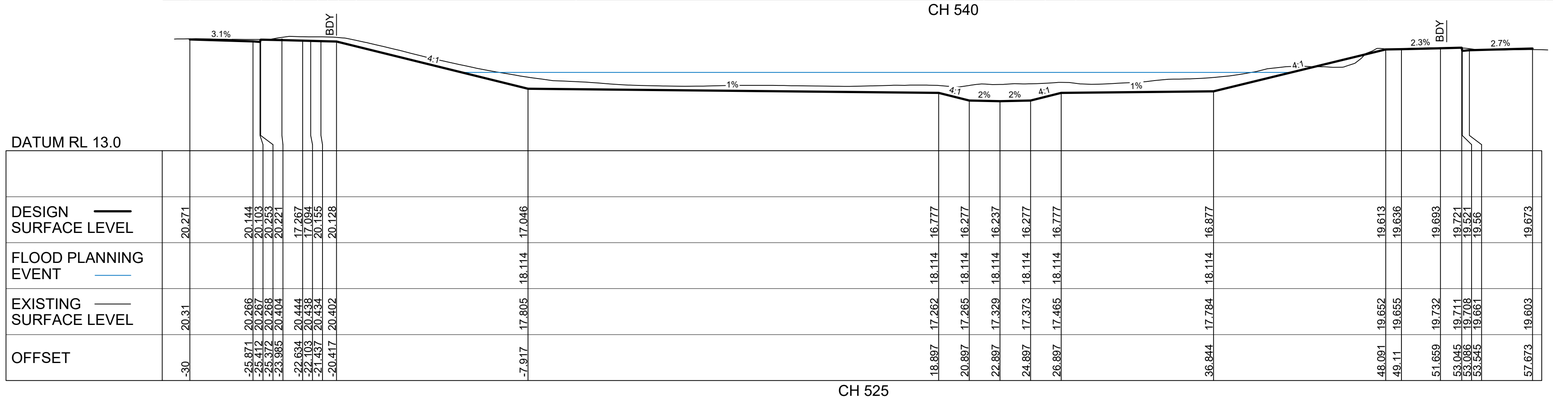
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 6

PLAN No: 11035005/CC370 A
FILE No: 11035005CC370
SHEET SIZE: A1 ORIGINAL







1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

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ISSUED FOR CONSTRUCTION APPROVAL

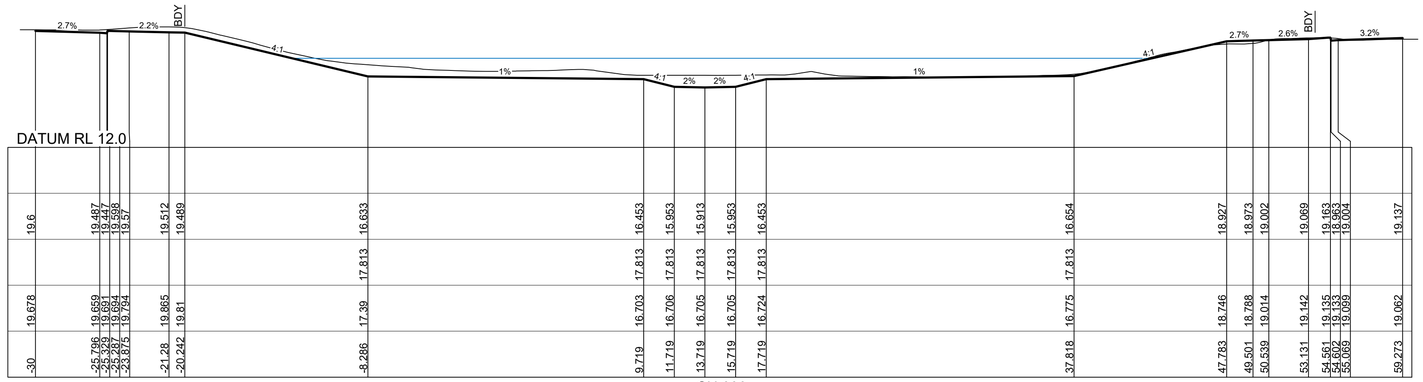
ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 7

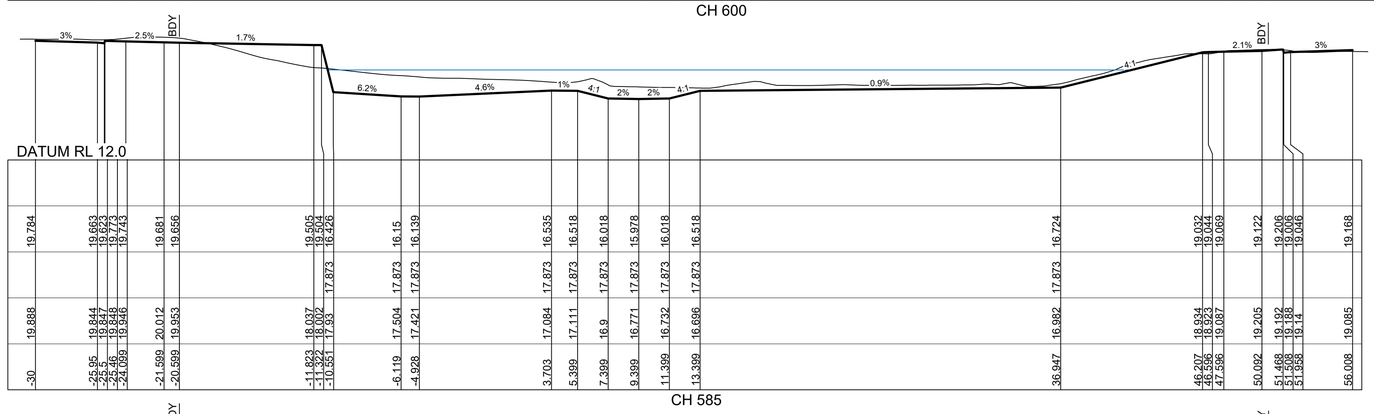
PLAN No: 11035005/CC371 A

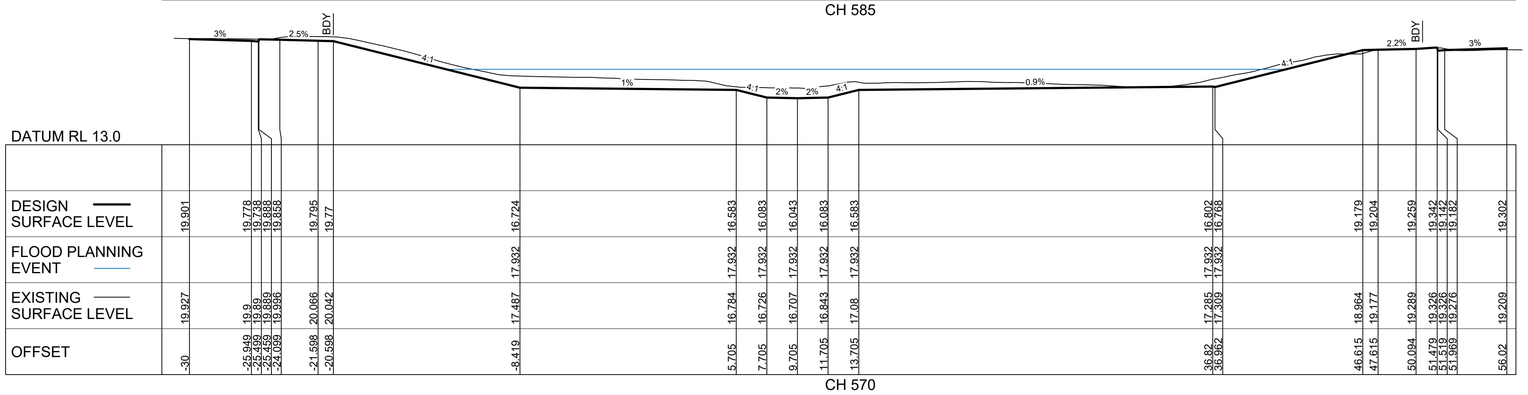
FILE No: 11035005CC371

SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:09:35 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC371.dwg







1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

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DATUM:
ORIGIN:

CLIENT: Stockland

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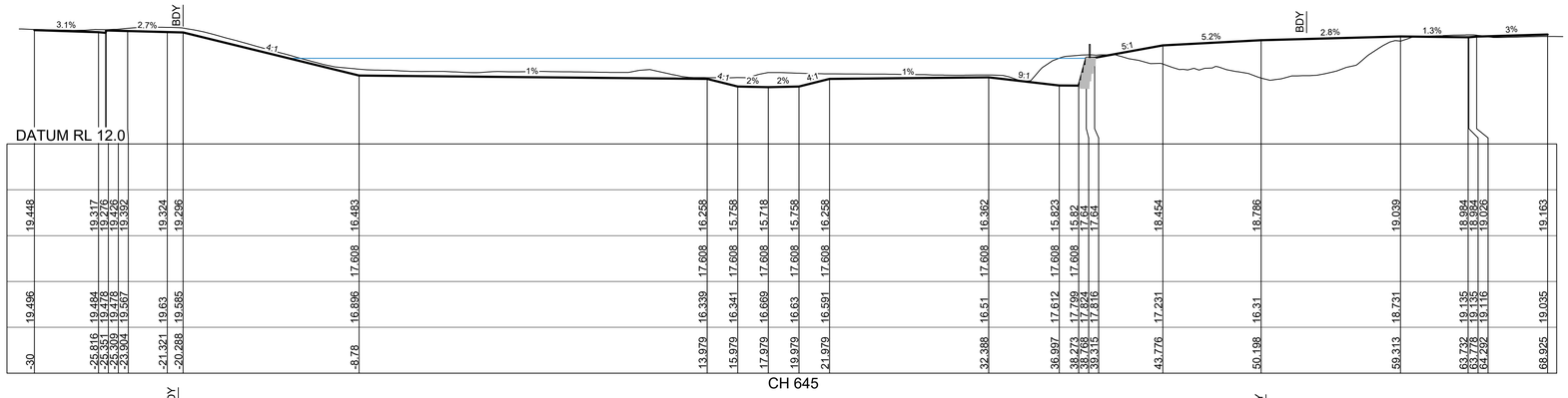
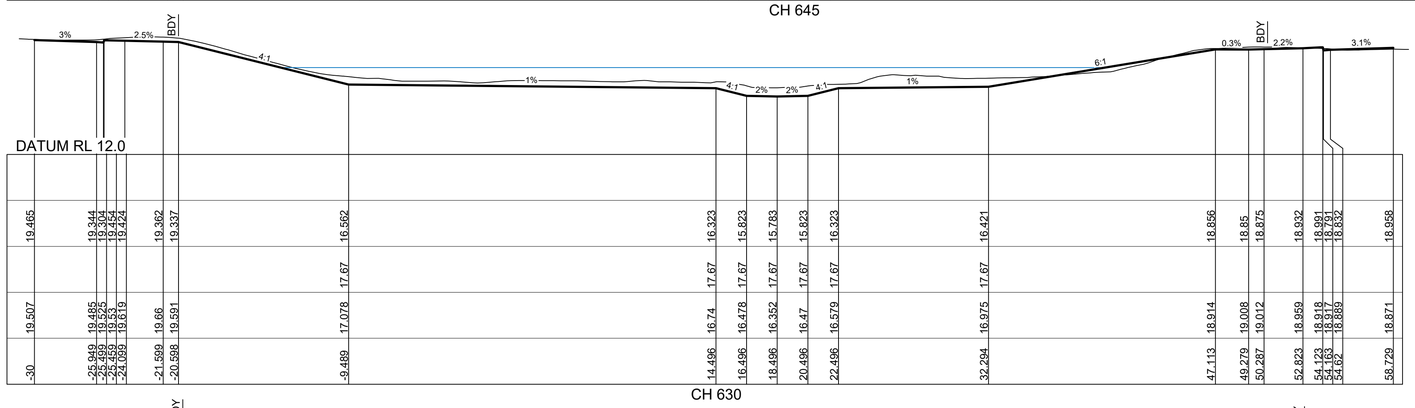
ISSUED FOR CONSTRUCTION APPROVAL

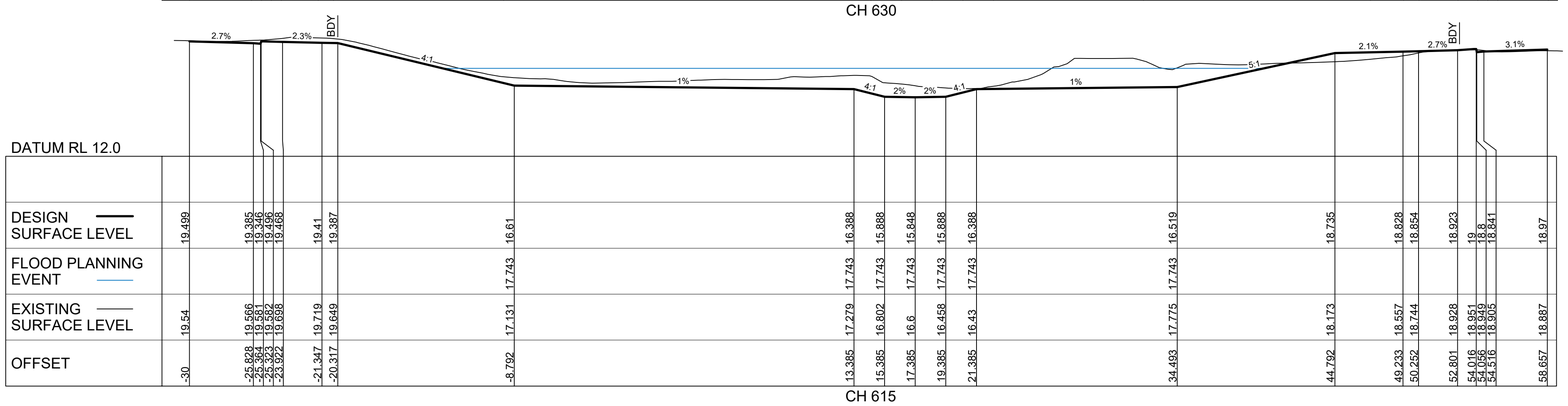
ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 8

PLAN No: 11035005/CC372 A
FILE No: 11035005CC372
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 10:09:44 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC372.dwg







1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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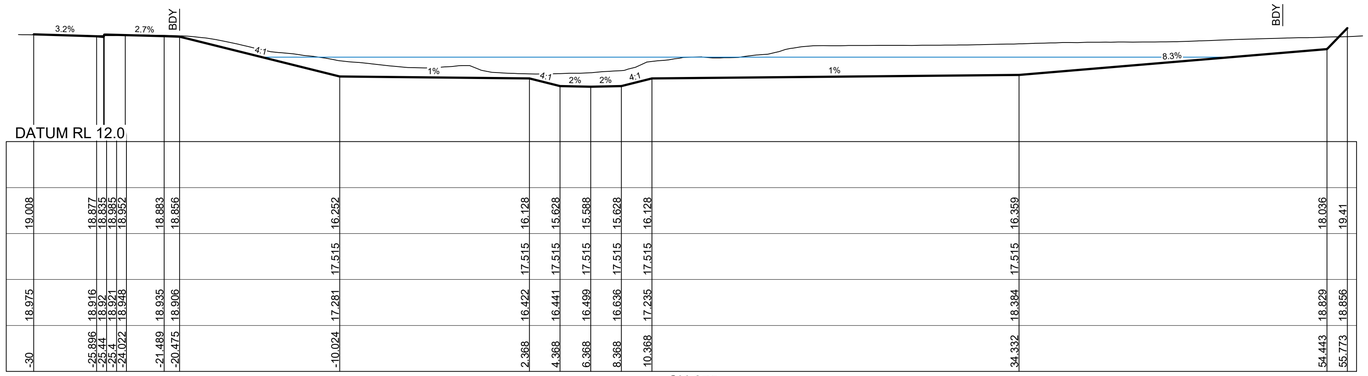
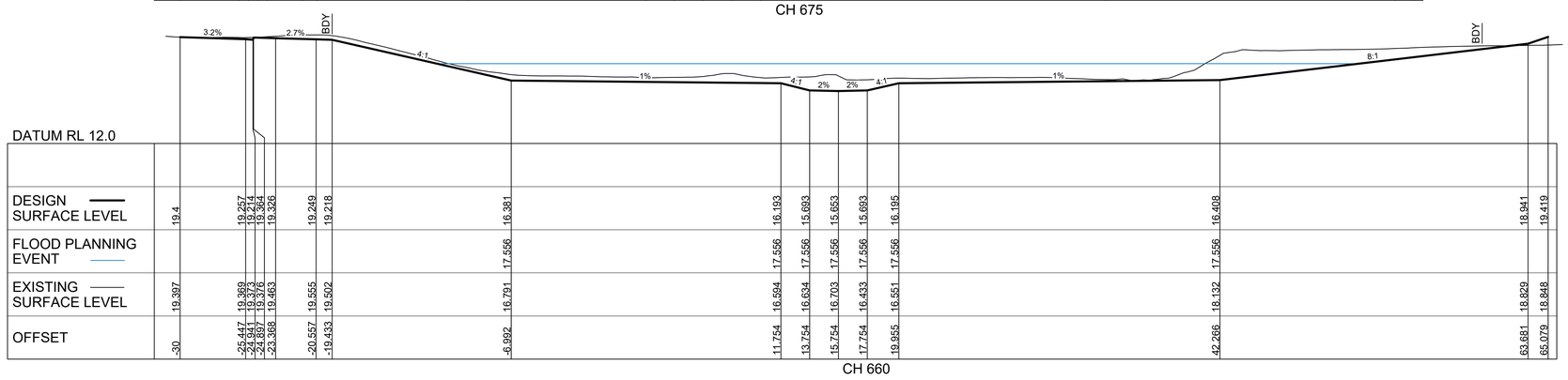
ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 9

PLAN No: 11035005/CC373 A
FILE No: 11035005CC373
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:09:53 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC373.dwg





1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S94 WORKS
CHANNEL TC01 - PART 2
CROSS SECTIONS
SHEET 10

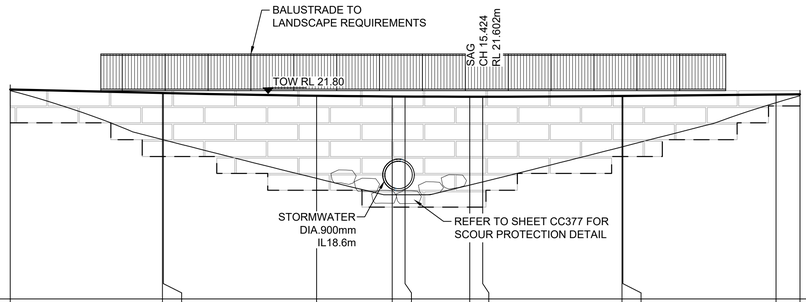
PLAN No: 11035005/CC374 A

FILE No: 11035005CC374

SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 10:10:01 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC374.dwg

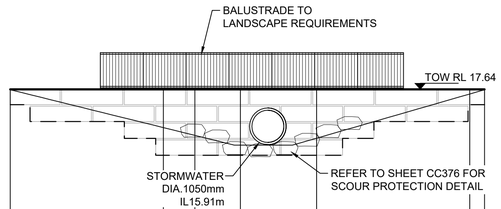
NOTE:
1. RETAINING WALLS SUBJECT TO STRUCTURAL CERTIFICATION.
2. SUBSOIL IS TO DISCHARGE THROUGH FACE OF WALL AT LOW POINT.



DATUM 15.0

WAE																
PARK FINISHED SURFACE LEVEL	21.837		21.723	21.722	21.635	21.612	21.610	21.603	21.602	21.625	21.626	21.676	21.683
BOTTOM OF WALL SURFACE	21.800		20.204	20.196	18.937	18.400	18.400	18.717	18.822	19.965	19.973	21.408	
CHAINAGE	0.000		4.970	5.000	10.000	12.470	12.891	15.000	15.424	19.970	20.000	25.000	25.782

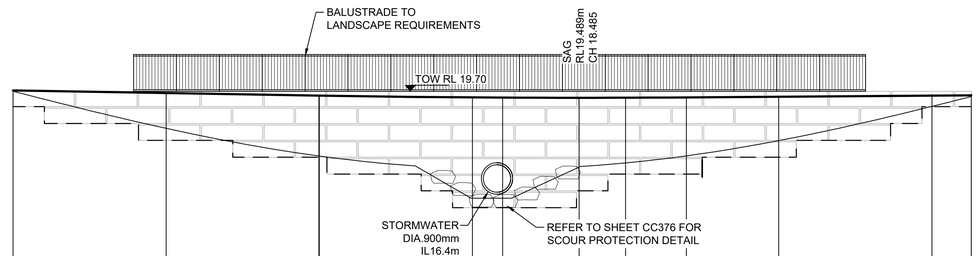
LONGITUDINAL SECTION REACH 4 PP6
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



DATUM 13.0

WAE									
TOP OF WALL	17.640		17.640	17.640	17.640	17.640		17.640	17.640
BOTTOM OF WALL SURFACE	17.630		16.393	16.139	15.820	16.047		17.490	
CHAINAGE	0.000		5.000	6.026	7.511	10.000		15.000	15.483

LONGITUDINAL SECTION REACH 4 HW1
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



DATUM 13.0

WAE																
PARK FINISHED SURFACE LEVEL	19.731		19.646		19.561	19.561		19.501	19.495	19.489	19.491	19.501	19.522		19.557	19.566
BOTTOM OF WALL SURFACE	19.701		18.491		17.589	17.587		16.210	16.210	17.227	17.362	17.593	18.091		19.207	
CHAINAGE	0.000		5.000		9.985	10.000		15.000	15.985	18.485	20.000	21.985	25.000		30.000	31.285

LONGITUDINAL SECTION REACH 4 PP2
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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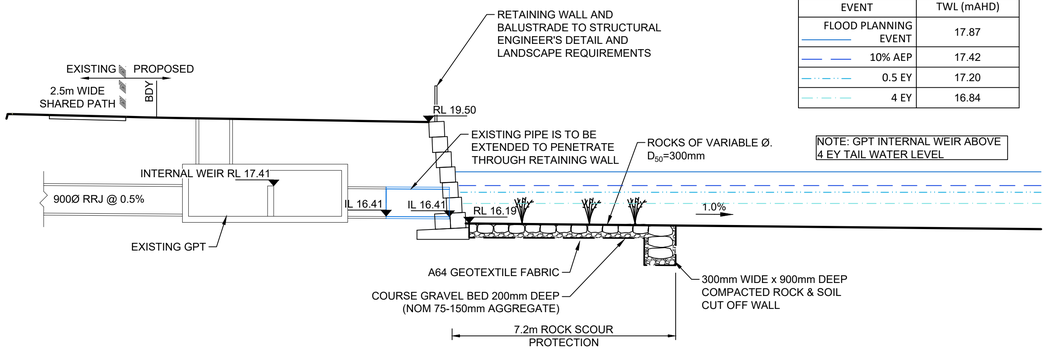
ELARA S94 WORKS
CHANNEL TC01 - PART 2
POCKET PARK LONGITUDINAL SECTIONS

PLAN No: 11035005/CC375 A
FILE No: 11035005CC375
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November, 2018 10:10:11 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC375.dwg

TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	17.87
10% AEP	17.42
0.5 EY	17.20
4 EY	16.84

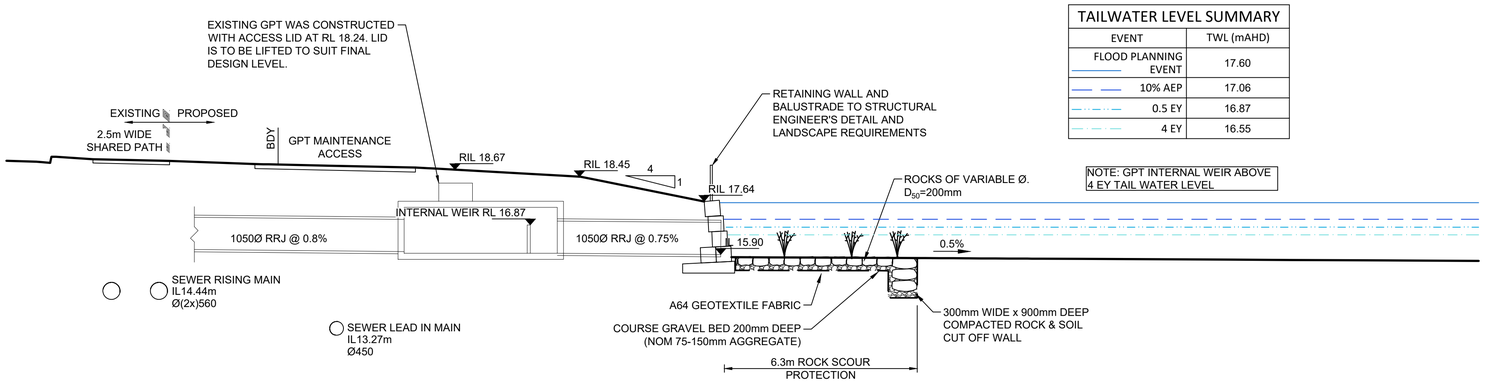
NOTE: GPT INTERNAL WEIR ABOVE 4 EY TAIL WATER LEVEL



SECTION B CC354
SCALE H 1:100
V 1:100

TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	17.60
10% AEP	17.06
0.5 EY	16.87
4 EY	16.55

NOTE: GPT INTERNAL WEIR ABOVE 4 EY TAIL WATER LEVEL



SECTION A CC354
SCALE H 1:100
V 1:100

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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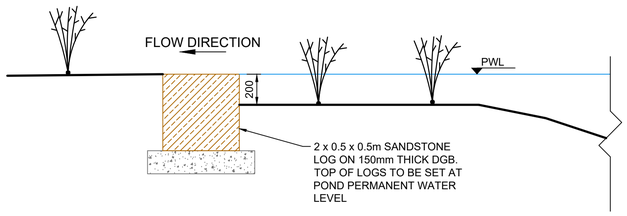
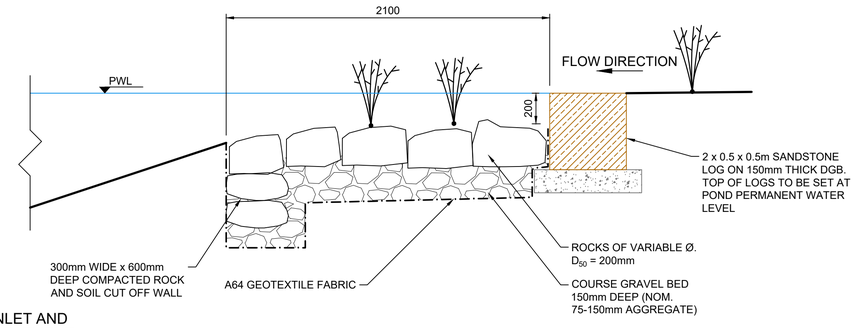
ELARA S94 WORKS
CHANNEL TC01 - PART 2
DETAIL SECTIONS
SHEET 1

PLAN No: 11035005/CC376 A
FILE No: 11035005CC376
SHEET SIZE: A1 ORIGINAL

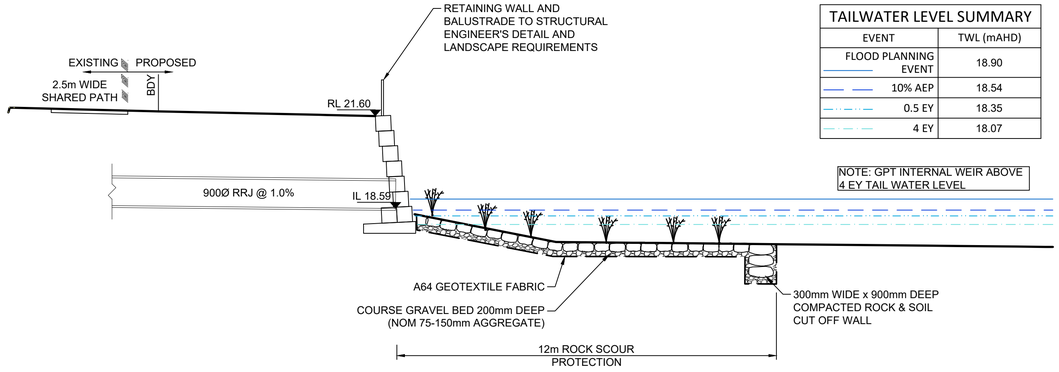
Plotted: 2 November, 2018 10:10:21 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC376.dwg





POND	LINEAR LENGTH OF SANDSTONE LOG SCOUR PROTECTION (m)	
	UPSTREAM	DOWNSTREAM
TC01 REACH 4	27	16

TYPCAL POND INLET AND OUTLET ROCK TREATMENT
SCALE 1:20



TAILWATER LEVEL SUMMARY	
EVENT	TWL (mAHD)
FLOOD PLANNING EVENT	18.90
10% AEP	18.54
0.5 EY	18.35
4 EY	18.07

SECTION C
SCALE H 1:100
V 1:100
CC356

1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES

1:100 (AT A1)
1:200 (AT A3) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
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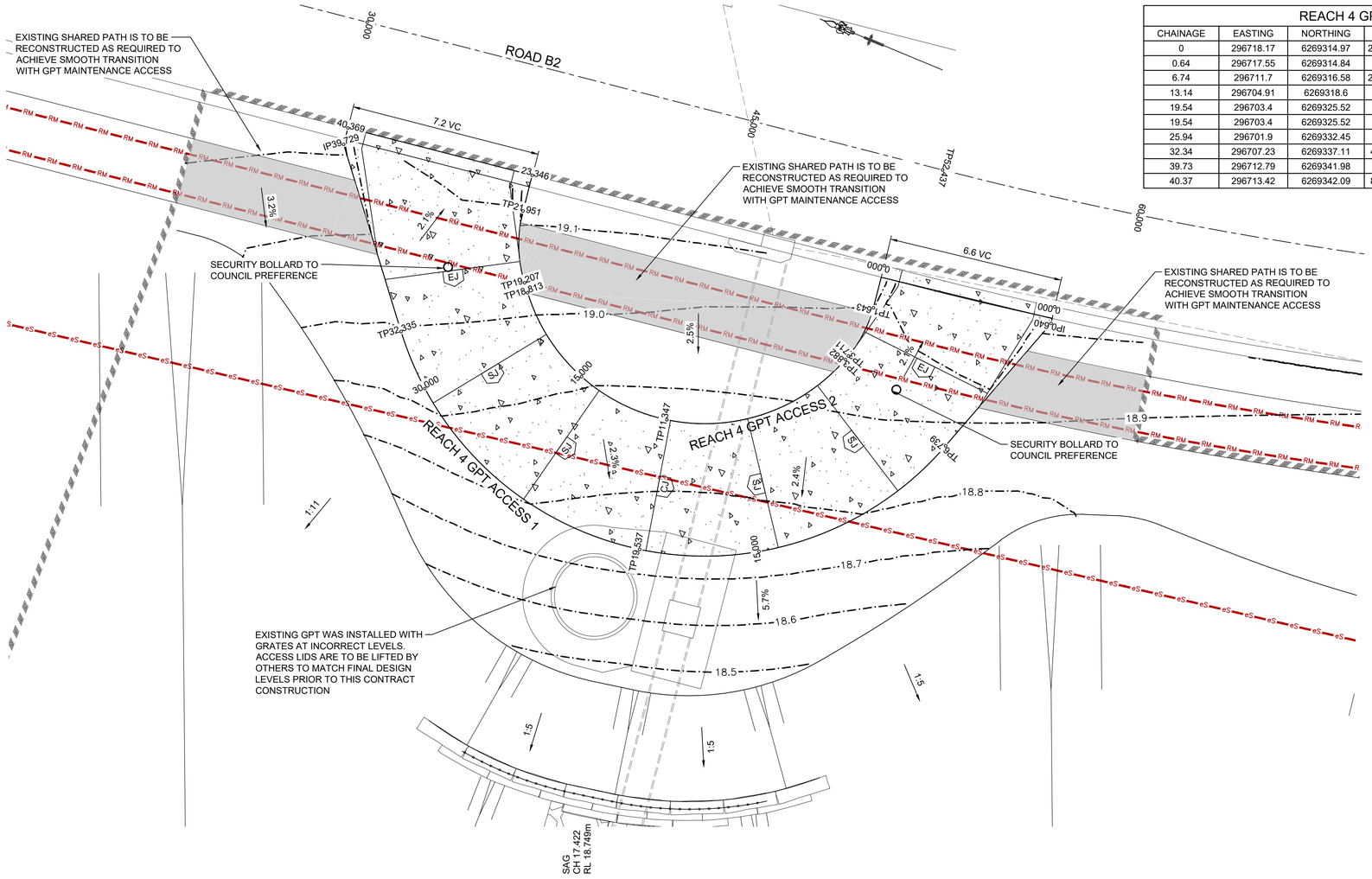
ELARA S94 WORKS
CHANNEL TC01 - PART 2
DETAIL SECTIONS
SHEET 2

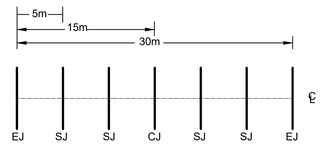
PLAN No: 11035005/CC377 A
FILE No: 11035005CC377
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:10:32 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC377.dwg

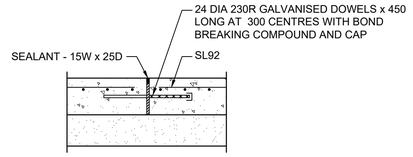


REACH 4 GPT ACCESS 1					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296718.17	6269314.97	258°14'31.93"		
0.64	296717.55	6269314.84			
6.74	296711.7	6269316.58	286°35'41.92"		
13.14	296704.91	6269318.6		12	12.8
19.54	296703.4	6269325.52			
19.54	296703.4	6269325.52			
25.94	296701.9	6269332.45		12	12.8
32.34	296707.23	6269337.11	48°48'41.95"		
39.73	296712.79	6269341.98			
40.37	296713.42	6269342.09	80°15'41.28"		

REACH 4 GPT ACCESS 2					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296716.96	6269321.48	260°15'41.34"		
1.64	296715.34	6269321.2	260°15'41.34"		
2.68	296714.3	6269321.02		4.5	2.07
3.71	296713.29	6269321.32	286°35'41.92"		
3.88	296713.13	6269321.37	286°35'41.92"		
7.61	296709.17	6269322.55		7	7.46
11.35	296708.29	6269326.59			
11.35	296708.29	6269326.59			
15.08	296707.41	6269330.63		7	7.47
18.81	296710.52	6269333.35	48°48'41.74"		
19.21	296710.82	6269333.61	48°48'41.74"		
20.58	296711.87	6269334.53		5	2.74
21.95	296713.26	6269334.77	80°15'41.34"		
23.35	296714.64	6269335.01	80°15'41.34"		

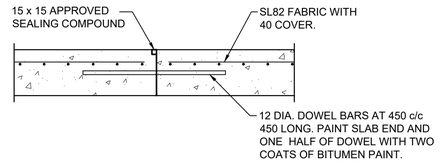


JOINT SPACING KEY



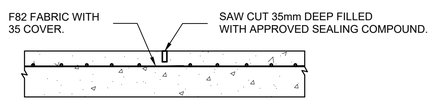
EXPANSION/CONSTRUCTION JOINT

(MAXIMUM 30m INTERVALS) EJ



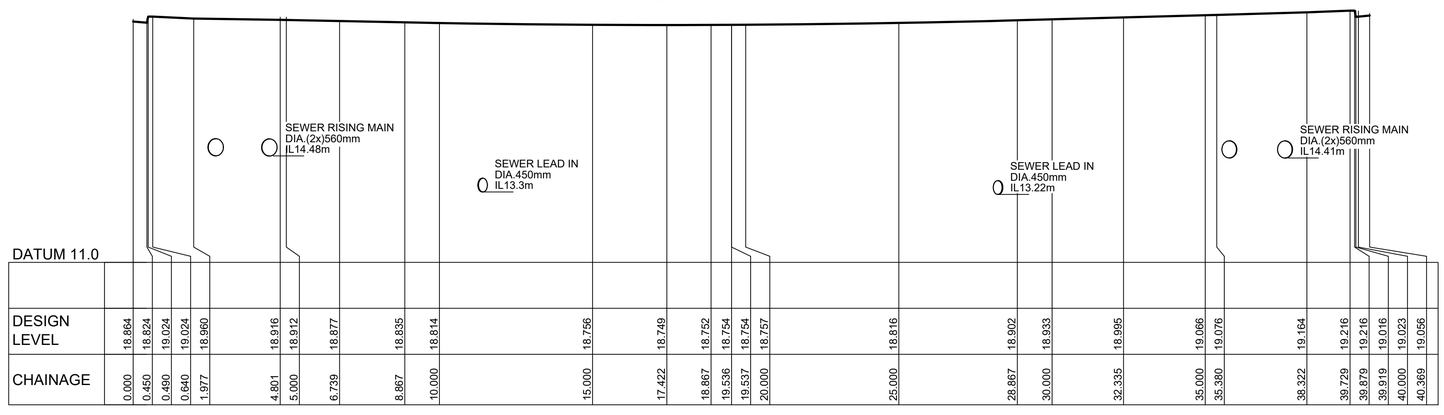
CONTRACTION JOINT (CJ)

(MAXIMUM 15m INTERVALS) NOTE: MAY BE USED AS A CONSTRUCTION JOINT CJ



SAWN JOINT (SJ)

(MAXIMUM 5m INTERVALS) SJ

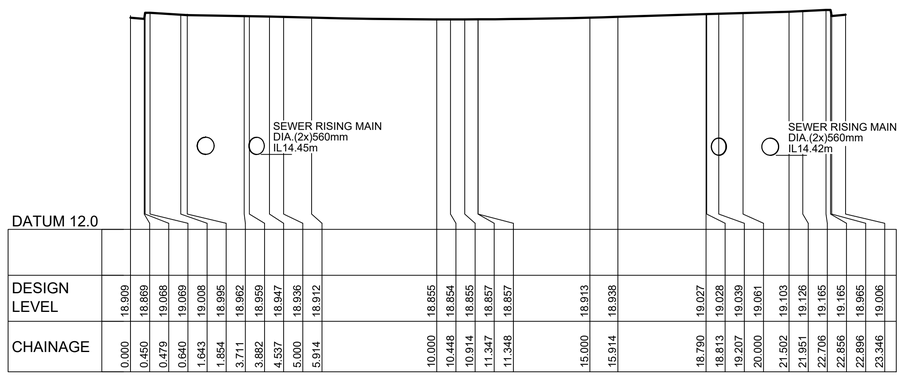


CHAINAGE	DESIGN LEVEL
0.000	18.864
0.450	18.824
0.490	19.024
0.640	19.024
1.977	18.960
4.801	18.916
5.000	18.912
6.739	18.877
8.867	18.835
10.000	18.814
15.000	18.756
17.422	18.749
18.867	18.752
19.536	18.754
19.537	18.754
20.000	18.757
25.000	18.816
28.867	18.902
30.000	18.933
32.335	18.995
35.000	19.066
35.380	19.076
38.322	19.164
39.729	19.216
39.879	19.216
39.919	19.016
40.000	19.023
40.369	19.056

LONGITUDINAL SECTION REACH 4 GPT ACCESS 1

HORIZONTAL SCALE 1:100

VERTICAL SCALE 1:100



CHAINAGE	DESIGN LEVEL
0.000	18.909
0.450	18.869
0.479	19.068
0.640	19.069
1.643	19.008
1.854	18.995
3.711	18.962
3.882	18.959
4.537	18.947
5.000	18.936
5.914	18.912
10.000	18.855
10.448	18.854
10.914	18.855
11.347	18.857
11.348	18.857
15.000	18.913
15.914	18.938
18.790	19.027
18.813	19.028
19.207	19.039
20.000	19.061
21.502	19.103
21.951	19.126
22.706	19.165
22.856	19.165
22.896	18.965
23.346	19.006

LONGITUDINAL SECTION REACH 4 GPT ACCESS 2

HORIZONTAL SCALE 1:100

VERTICAL SCALE 1:100

1:100 (AT A1)
1:200 (AT A3)

2 1 0 1 2 3 4 5 6 7 8 9 10

METRES

CLIENT: Stockland

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AZIMUTH:

DATUM:

ORIGIN:

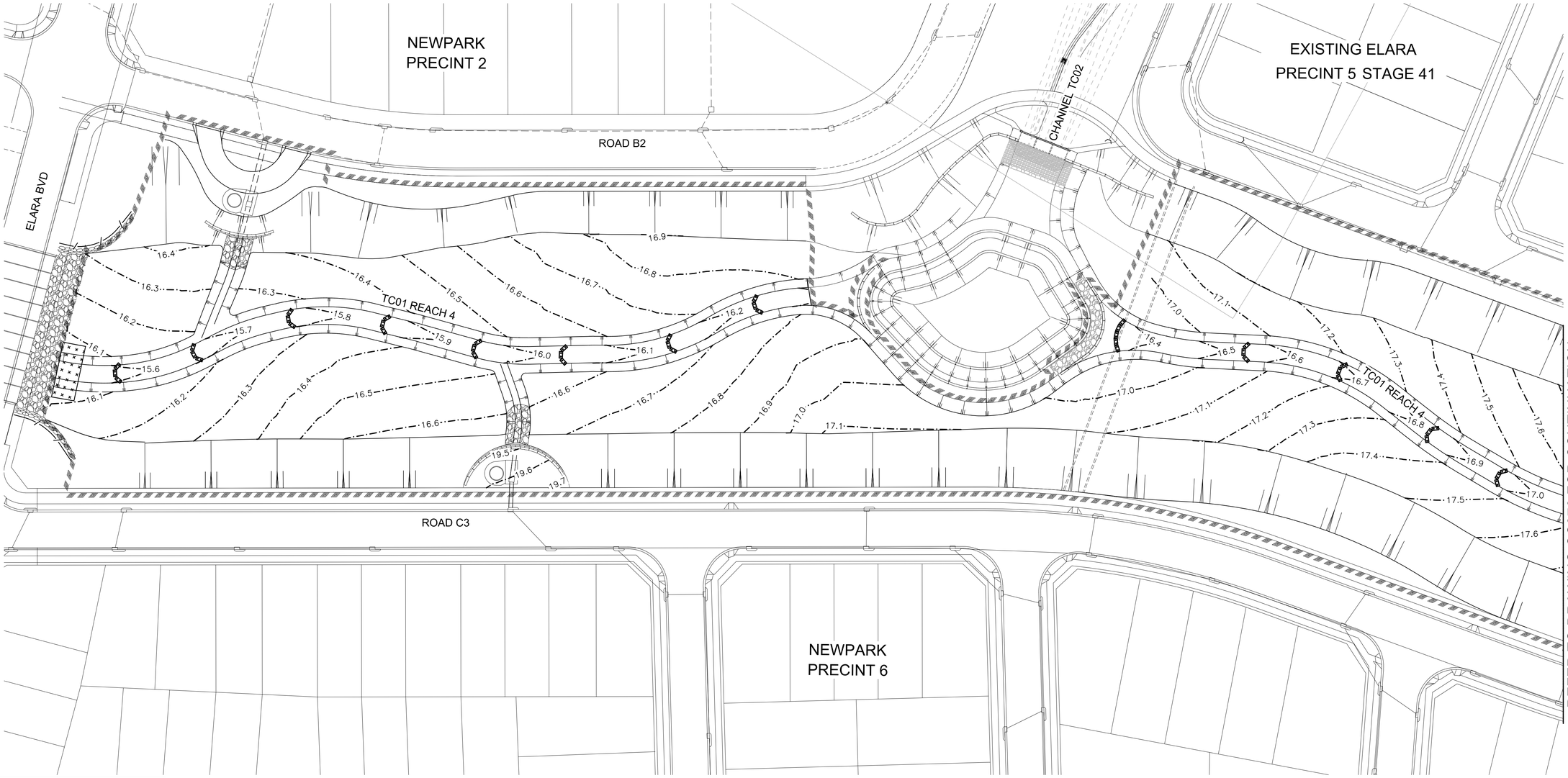
ELARA S94 WORKS
CHANNEL TC01 - PART 2
GPT ACCESS DETAILS

PLAN No: 11035005/CC378 A

FILE No: 11035005CC378

SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:11:03 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC378.dwg



LEGEND

- SEDIMENT FENCE
- STRAW BALE BARRIER
- MESH AND GRAVEL INLET FILTER
- CHECK DAM

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT: Stockland

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A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	02/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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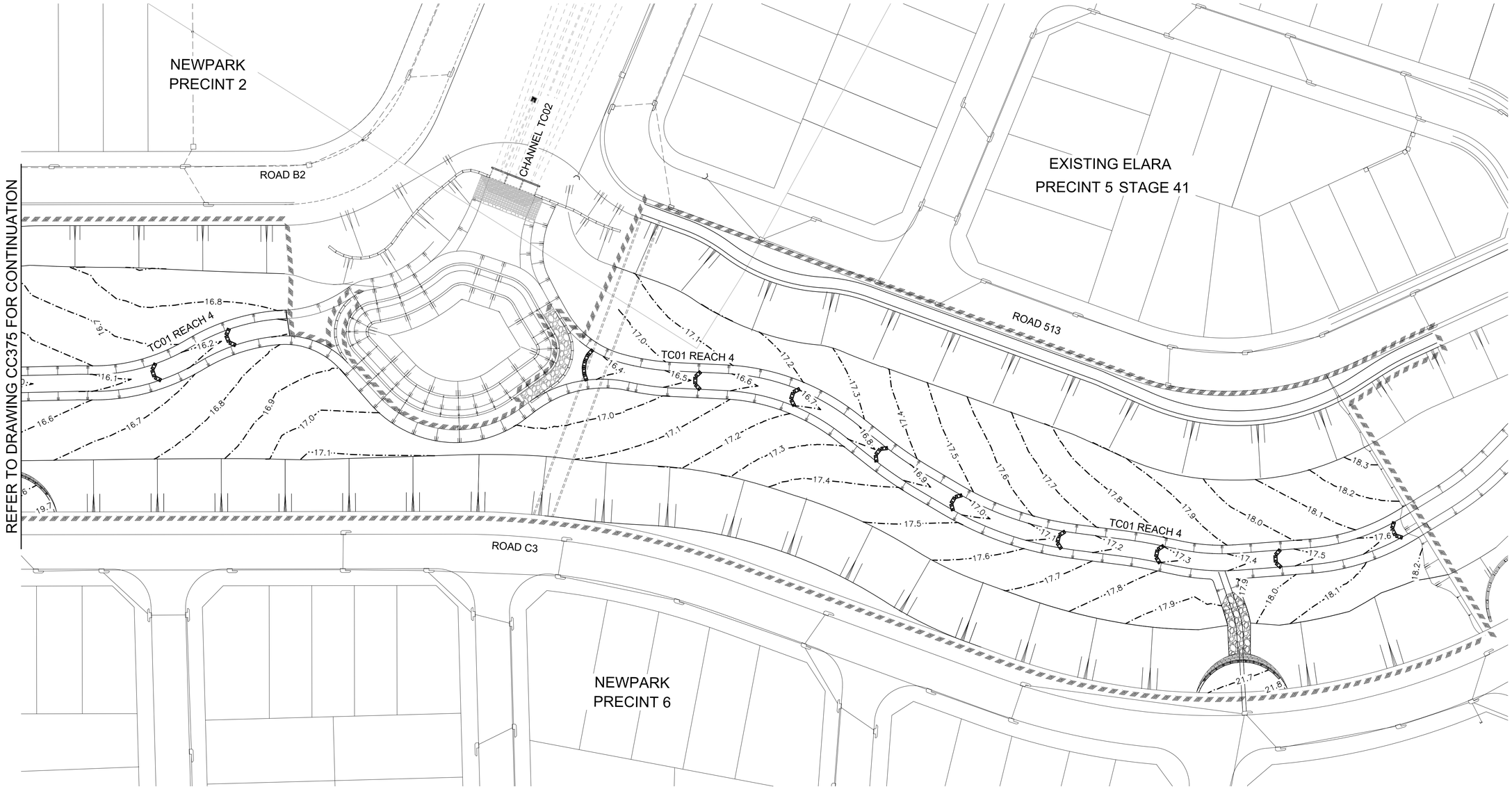
ELARA S94 WORKS
CHANNEL TC01 - PART 2
SOIL AND WATER MANAGEMENT PLAN
SHEET 1

PLAN No: 11035005/CC379 A
FILE No: 11035005CC379
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:11:29 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC379.dwg



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- STRAW BALE BARRIER
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ELARA S94 WORKS
CHANNEL TC01 - PART 2
SOIL AND WATER MANAGEMENT PLAN
SHEET 2

PLAN No: 11035005/CC380 A
FILE No: 11035005CC380
SHEET SIZE: A1 ORIGINAL

Plotted: 2 November , 2018 10:11:55 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC380.dwg

SOIL AND WATER MANAGEMENT NOTES

GENERAL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE BLACKTOWN CITY COUNCIL.

2. BULK EARHWORKS ARE TO BE UNDERTAKEN IN STAGES. THE CONTRACTOR IS TO PREPARE A STAGING PLAN WHICH IS TO BE SUBMITTED TO THE PCA PRIOR TO THE COMMENCEMENT OF WORKS.

3. TOPSOIL FROM ALL AREAS TO BE DISTURBED SHALL BE STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN THOSE AREAS.

4. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILIZED AS EARLY AS POSSIBLE DURING DEVELOPMENT.

5. ALL TAIL-OUT DRAINS SHALL BE COUCH GRASSED AND TRAPEZOIDAL IN SECTION. STRAW BALES SHALL BE PLACED AS A SEDIMENT CONTROL DEVICE WHERE REQUIRED.

6. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING DEVELOPMENT CONFINING ACCESS WHERE POSSIBLE TO PROPOSED OR EXISTING ROAD ALIGNMENTS. AREAS TO BE LEFT UNDISTURBED SHALL BE MARKED OFF.

7. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.

8. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM 60% FULL OF SOLID MATERIALS, INCLUDING DURING THE MAINTENANCE PERIOD.

9. THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.

10. CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" ("THE BLUE BOOK").

11. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.

12. THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (PREF 2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES - WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDENTIFIED WITH BARRIER FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 10m	THE SITE MANAGER SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES. WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION.

NOTE:
WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED - ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE C-FACTORS BELOW 0.05 FROM 1st JANUARY TO 15th MAY USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

13. GENERALLY WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE AND WILL BE DETAILED IN THE CONSTRUCTION CERTIFICATE DRAWINGS. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:-

    a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE CC PLANS AND TO DETAIL(SD) 6-7.
    b. CONSTRUCT STABILISED SITE ACCESS AS SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-7.
    c. CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-3.
    d. PROVIDE TEMPORARY ACCESS TO THE SEDIMENT BASIN(S)AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6-7 OR BARRIER FENCING AND EARTH BANKS (SD) 5-2.
    e. PLACE SEDIMENT FENCING (SD) 6-7 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.
    f. CONSTRUCT SEDIMENT BASIN(S) GENERALLY IN ACCORDANCE WITH (SD) 6-4
    g. STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASIN(S) AS SOON AS FINAL LEVELS ARE ESTABLISHED
    h. CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE CC PLANS OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD) 4-1.
    i. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS.
    j. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
    k. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

14. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE

15. EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER THAN:-

    a. 2(h) - 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
    b. 2.5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
    c. 3(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
    d. 4(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
    e. 5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
    f. 6(h) - 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

    SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

16. PROTECTION FROM EROSIVE FORCES SHALL BE UNDERTAKEN ON ALL LANDS TO MEET THE REQUIREMENTS OF TABLE J3-3 "MAXIMUM ACCEPTABLE C-FACTORS AT NOMINATED TIMES DURING WORKS" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION"

17. TEMPORARY GROUND COVER IN SHEET FLOW AREAS IS TO BE IN ACCORDANCE WITH TABLE J3-4 "PLANT SPECIES FOR GROUND COVER" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" WHERE PRACTICAL FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATED AREAS

18. WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO BE SCHEDULED SO THAT THE TIME FROM STARTING LAND DISTURBANCE ACTIVITIES TO STABILISATION IS A DURATION OF LESS THAN 6 MONTHS - THIS MEANS ACHIEVING A C-FACTOR OF LESS THAN 0.1 AND SETTING IN MOTION A PROGRAM THAT ENSURES THAT IT DROPS PERMANENTLY, (BY VEGETATION, PAVING, ARMOURING etc.) TO LESS THAN 0.05 WITHIN A FURTHER 60 DAYS. LOCAL WATER RESTRICTIONS PERMITTING, LANDS THAT HAVE BEEN NEWLY PLANTED WITH GRASS SPECIES SHALL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER HAS BEEN ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER SHALL BE APPLIED AS NECESSARY IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE VEGETATIVE PROTECTION. NOTWITHSTANDING THIS SCHEDULE WORKS SO THAT THE DURATION FROM THE CONCLUSION OF LAND SHAPING TO THE COMPLETION OF FINAL STABILISATION IS LESS THAN 20 WORKING DAYS.

19. SEDIMENT FENCES (SD) 6-7 SHALL:-

    a. BE INSTALLED WHERE SHOWN ON THE CC PLANS AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
    b. HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m, AND A STORAGE DEPTH OF AT LEAST 0.6m.
    c. PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHMENT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 40litres/sec IN A MAX. 20yr Tc DISCHARGE.

20. STOCKPILES (SD) 4-1 SHALL BE LOCATED AS SHOWN ON THE CC PLANS AND AT THE DISCRETION OF THE SITE SUPERINTENDENT.

21. DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDANTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.

22. NOTWITHSTANDING NOTE 21 STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.

23. THE SEDIMENT RETENTION BASINS (SD) 6-4 SHALL:-

    a. BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
    b. BE FLOCCULATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
    c. HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.

24. STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:-

    a. LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
    b. THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
    c. THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT
    d. DISCHARGING SEDIMENT FROM THE SITE.

25. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR.

26. WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD) 6-8 & 6-9.

27. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED.

28. ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

STOCKPILE NOTES:

1. SPOIL AN TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREAS WHERE WATER MAY CONCENTRATE.

2. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 14 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.

3. FOLLOWING CONSTRUCTION, TOPSOIL SHALL BE RESPREAD TO A MINIMUM DEPTH OF 100mm ON THE BARE SOIL SURFACES AND REVEGETATE.

4. PLASTIC SHEETING MUST BE PLACED OVER THE STOCKPILE TO MINIMISE WIND BLOWN DUST.

SEDIMENTATION CONTROL DEVICES:

1. ALL STRAW BALES SHALL BE BOUND WITH WIRE. STRAW BALES SHALL BE PLACED END TO END IN A SINGLE ROW AND EMBEDDED INTO THE SOIL TO A DEPTH OF 100mm. EACH BALE SHALL BE SECURELY ANCHORED WITH TWO STEEL STAKES DRIVEN 450mm INTO THE GROUND AND LOCKED ON THE BALE CENTRELINE.

2. SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG IT'S LOWER EDGE.

3. PROVIDE STRIP OF TURF MIN. 300mm WIDE BEHIND KERB + 1m WIDE AROUND ALL SURFACE INLET PITS

SITE INSPECTION AND MAINTENANCE:

1. A SELF-AUDITING PROGRAM SHALL BE ESTABLISHED BASED ON A CHECK SHEET. A SITE INSPECTION USING THE CHECK SHEET SHALL BE MADE BY THE SITE MANAGER-:

    a. AT LEAST WEEKLY
    b. IMMEDIATELY BEFORE SITE CLOSURE
    c. IMMEDIATELY FOLLOWING RAINFALL EVENTS IN EXCESS OF 5mm IN ANY 24hr PERIOD.

    THE SELF AUDIT SHALL INCLUDE:-

    a. RECORDING THE CONDITION OF EVERY 'BEST MANAGEMENT PRACTICE' EMPLOYED
    b. RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH 'BEST MANAGEMENT PRACTICE'
    c. RECORDING THE VOLUMES OF SEDIMENT REMOVED FROM SEDIMENT RETENTION SYSTEMS WHERE APPLICABLE
    d. RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
    e. FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER FOR THEIR INFORMATION.

2. IN ADDITION A SUITABLY QUALIFIED PERSON SHALL BE RESPONSIBLE FOR OVERSEEING THE INSTALLATION AND MAINTENANCE OF ALL SOIL AND WATER MANAGEMENT WORKS ON THE SITE. THE PERSON SHALL BE REQUIRED TO SPEND A MINIMUM OF:-

    a. 2hrs ONSITE EACH FORTNIGHT UP UNTIL COMPLETION OF ROAD AND DRAINAGE WORKS AND/OR THE COMMISSIONING OF SEDIMENT BASIN(S)/WATER QUALITY CONTROL FACILITIES, AND DURING THE DECOMMISSIONING OF SAME AND/OR FINAL SITE STABILISATION. TO PROVIDE A SHORT MONTHLY WRITTEN REPORT.
    b. ONE HOUR ONSITE EACH 2 MONTHS DURING THAT PHASE WHERE THE DEVELOPERS RESPONSIBILITIES ARE LIMITED TO MAINTENANCE OF THE SDS DEVICES AND/OR SEDIMENT BASINS (ie DURING THE STAGE WHEN BUILDING WORKS CAN BE UNDERTAKEN) TO PROVIDE A SHORT WRITTEN REPORT EACH 4 MONTHS

    THE RESPONSIBLE PERSON SHALL ENSURE THAT:-

    a. THIS PLAN IS BEING IMPLEMENTED CORRECTLY
    b. REPAIRS ARE BEING UNDERTAKEN AS REQUIRED
    c. ESSENTIAL MODIFICATIONS TO THIS PLAN ARE BEING MADE IF AND WHEN NECESSARY EACH REPORT SHALL CERTIFY THAT WORKS HAVE BEEN CARRIED OUT ACCORDING TO THE APPROVED PLANS.

3. WASTE BINS SHALL BE EMPTIED AS NECESSARY, DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT

4. PROPER DRAINAGE OF THE SITE SHALL BE MAINTAINED. TO THIS END DRAINS (INCLUDING INLET AND OUTLET WORKS) SHALL BE CHECKED TO ENSURE THAT THEY ARE OPERATING AS INTENDED,ESPECIALLY THAT:-

    a. NO LOW POINTS EXIST WHICH CAN OVERTOP IN A LARGE STORM EVENT.
    b. AREAS OF EROSION ARE REPAIRED (e.g LINED WITH SUITABLE MATERIAL) AND/OR VELOCITY OF FLOW IS REDUCED APPROPRIATELY THROUGH CONSTRUCTION OF SMALL CHECK DAMS OR INSTALLING ADDITIONAL DIVERSIONS UPSLOPE
    c. BLOCKAGES ARE CLEARED (THESE MIGHT OCCUR BECAUSE OF SEDIMENT POLLUTION, SAND/SOIL/SPOIL BEING DEPOSITED IN OR TOO CLOSE TO THEM, BREACHED BY VEHICLE WHEELS etc)

5. SAND/SOIL/SPOIL MATERIALS PLACED CLOSER THAN 2m FROM HAZARD AREAS SHALL BE REMOVED SUCH HAZARD AREAS INCLUDE ANY AREAS OF HIGH VELOCITY WATER FLOWS (eg WATERWAYS AND GUTTERS) PAVED AREAS AND DRIVEWAYS.

6. RECENTLY STABILISED LANDS SHALL BE CHECKED TO ENSURE THAT THE EROSION HAZARD HAS BEEN EFFECTIVELY REDUCED. ANY REPAIRS SHALL BE INITIATED AS APPROPRIATE.

7. EXCESSIVE VEGETATIVE GROWTH SHALL BE CONTROLLED THROUGH MOWING OR SLASHING.

8. ALL SEDIMENT DETENTION SYSTEMS SHALL BE KEPT IN GOOD WORKING CONDITION. IN PARTICULAR ATTENTION SHALL BE GIVEN TO:-

    a. RECENT WORKS TO ENSURE THAT THEY HAVE NOT RESULTED IN DIVERSION OF SEDIMENT LADEN WATER AWAY FROM THEM.
    b. DEGRADABLE PRODUCTS TO ENSURE THAT THEY ARE REPLACED AS REQUIRED
    c. SEDIMENT REMOVAL TO ENSURE THE DESIGN CAPACITY OR LESS REMAINS IN THE SETTLING ZONE.

9. ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS SHALL BE CONSTRUCTED AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS (ie MAKE ONGOING CHANGES TO THIS PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS AT THE WORKS SITE OR ELSEWHERE IN THE CATCHMENT.

10. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN A FUNCTIONING CONDITION UNTIL ALL EARTHWORKS ACTIVITIES ARE COMPLETED AND THE SITE STABILISED.

11. WATERS IN SEDIMENT RETENTION BASIN(S) THAT OCCUPY MORE THAN 1/4 OF THE DESIGN CAPACITY DURING THAT STAGE OF THE WORKS UP UNTIL COMMISSIONING OF THE BASIN(s) SHALL BE:-

    a. TREATED WITH A FLOCCULATING AGENT (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.)
    b. DISCHARGED WITHIN 5 days FROM THE CONCLUSION OF ANY STORM EVENT LARGE ENOUGH TO FILL THE BASIN TO THAT LEVEL.

12. LITTER, DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM THE GROSS POLLUTANT TRAPS AND TRASH RACKS AS REQUIRED.

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SOIL AND WATER MANAGEMENT NOTES

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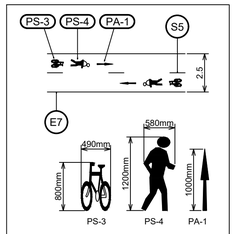
SHARED PATH - PAVEMENT MARKING SCHEDULE

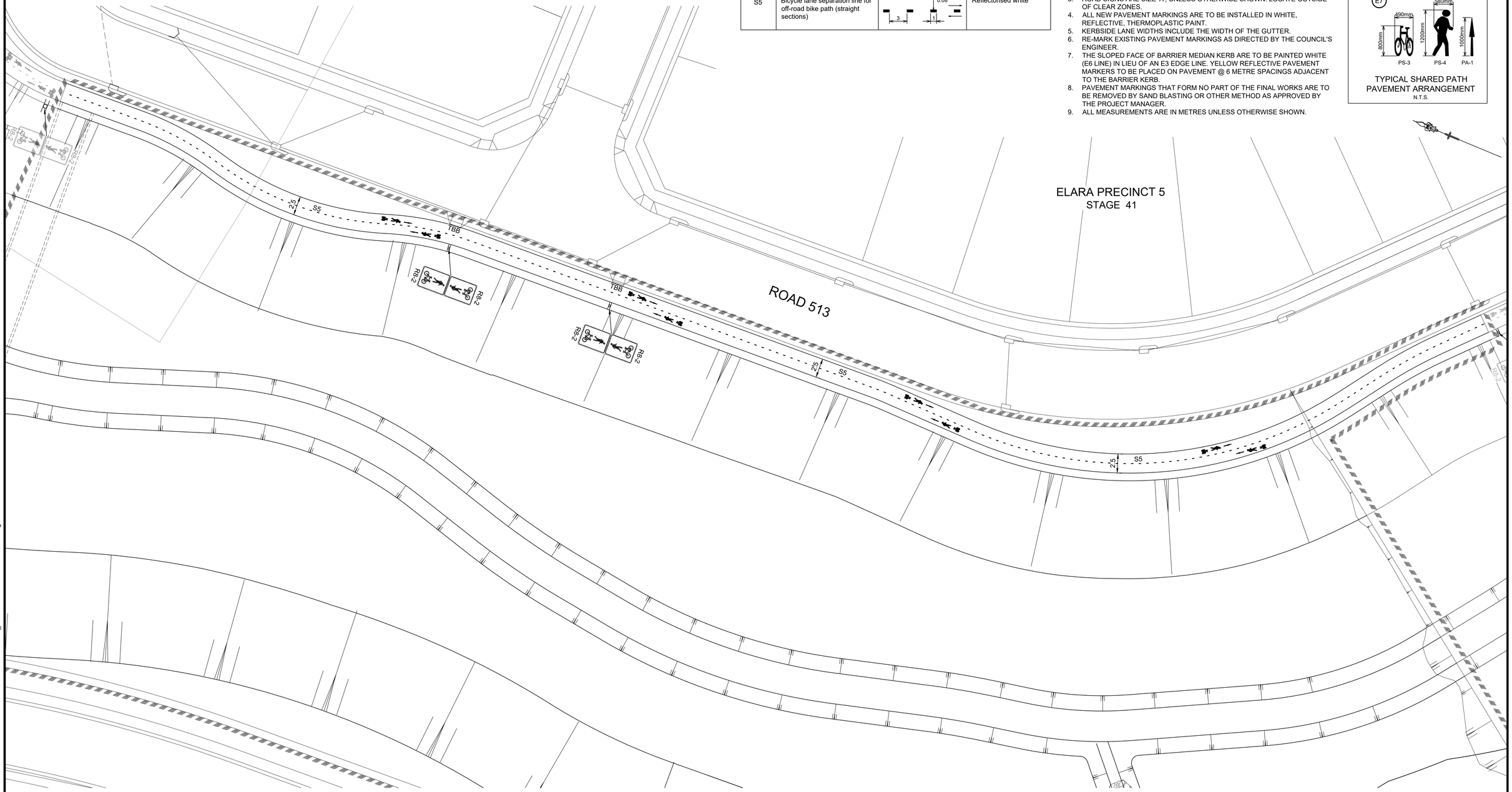
CODE	USE	STYLE	COLOUR & TYPE
TBB	Give way line on Path	0.2m 0.20 0.2m 0.15	Reflectorised white
S5	Bicycle lane separation line for off-road bike path (straight sections)	0.08 3 1	Reflectorised white

NOTES

1. ALL PAVEMENT MARKINGS, CHEVRONS AND REFLECTORS ARE TO BE IN ACCORDANCE WITH Rms STANDARD DRAWINGS MD.R60 AND AUSTRALIAN STANDARDS.
2. ALL SIGNS TO BE IN ACCORDANCE WITH CURRENT AUSTRALIAN STANDARD;
   AS 1743 - ROAD SIGNS AND COUNCIL'S SPECIFICATION UNLESS OTHERWISE SHOWN.
3. ROAD SIGNS ARE SIZE 'A', UNLESS OTHERWISE SHOWN. LOCATE OUTSIDE OF CLEAR ZONES.
4. ALL NEW PAVEMENT MARKINGS ARE TO BE INSTALLED IN WHITE, REFLECTIVE, THERMOPLASTIC PAINT.
5. KERBSIDE LANE WIDTHS INCLUDE THE WIDTH OF THE GUTTER.
6. RE-MARK EXISTING PAVEMENT MARKINGS AS DIRECTED BY THE COUNCIL'S ENGINEER.
7. THE SLOPED FACE OF BARRIER MEDIAN KERB ARE TO BE PAINTED WHITE (E6 LINE) IN LIEU OF AN E3 EDGE LINE. YELLOW REFLECTIVE PAVEMENT MARKERS TO BE PLACED ON PAVEMENT @ 6 METRE SPACINGS ADJACENT TO THE BARRIER KERB.
8. PAVEMENT MARKINGS THAT FORM NO PART OF THE FINAL WORKS ARE TO BE REMOVED BY SAND BLASTING OR OTHER METHOD AS APPROVED BY THE PROJECT MANAGER.
9. ALL MEASUREMENTS ARE IN METRES UNLESS OTHERWISE SHOWN.



TYPICAL SHARED PATH PAVEMENT ARRANGEMENT
N.T.S.



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5 0 5 10 15 20 25
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CHANNEL TC01 - PART 2
SIGNAGE AND LINEMARKING PLAN

PLAN No: 11035005/CC382 A
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Plotted: 2 November , 2018 10:12:36 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\07_TC01 Part 2\11035005CC382.dwg

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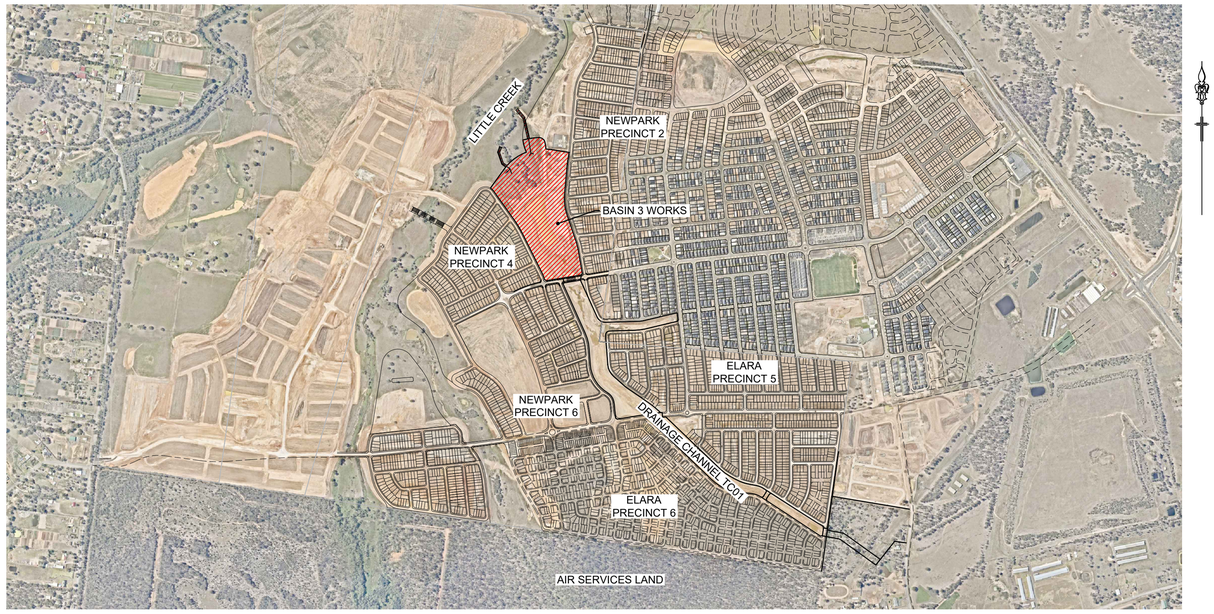
ELARA - BASIN 3
SECTION 7.11 CONSTRUCTION CERTIFICATE
CONTRIBUTION PLAN No.21, ITEMS ML 1.0 AND ML 1.1
COUNCIL REFERENCE: JRPP-15-02324



LOCALITY SKETCH

Prepared By:

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300
W www.jwprince.com.au
E jwp@jwprince.com.au

ISSUED FOR CONSTRUCTION APPROVAL

PLAN No. 11035005/CC400 A

FILE No. 11035005CC400

Plotted: November 15, 2018 File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC400.dwg

LEGEND

DESCRIPTION	PROPOSED	EXISTING	FUTURE
EXTENT OF WORKS			
PRAM RAMP			
DRAINAGE LINE, PIT & EASEMENT	05/05 Ø225		
DRAINAGE LINE & PIT	05/06 Ø600		
SUBSOIL DRAINAGE	SS SS		
HEADWALL			
CONTOURS	46.0	47.0	
CATCH DRAIN			
ELECTRICITY, POWER POLE	E E E E	eE eE PP eE	
TELECOM, BOX	T T T T	eT eT eT eT	
WATER, STOP VALVE, HYDRANT	W W W W	eW HYD eW SV eW	
SEWER, MANHOLE	S S S S	eS eS SMH S	
GAS	G G G G	eG eG eG	
SEWER RISING MAIN	RM RM RM		
STABILISED SITE ACCESS			
SEDIMENT FENCE			
STRAW BALE BARRIER			
STOCKPILE	SP		
PROTECTIVE FENCING			
MESH AND GRAVEL INLET FILTER			
GEOTEXTILE INLET FILTER			
SP2 ZONING BOUNDARY			

CONTRIBUTIONS PLAN (NO.21) ITEMS INCLUDED IN THIS APPLICATION

SITE NO.	DESCRIPTION
ML 1.0	DETENTION BASIN
MP 1.1	BIO-RETENTION

CIVIL PLAN INDEX

PLAN NO.	PLAN NAME	REV.
11035005/CC400	COVER SHEET	A
11035005/CC401	GENERAL NOTES, LEGEND & INDEX	B
11035005/CC402	OVERALL ARRANGEMENT PLAN	A
11035005/CC403	ENGINEERING PLAN SHEET 1	A
11035005/CC404	ENGINEERING PLAN SHEET 2	A
11035005/CC405	ENGINEERING PLAN SHEET 3	A
11035005/CC406	CUT AND FILL PLAN	A
11035005/CC407	PAVEMENT AND GROUND COVER PLAN	A
11035005/CC408	FLOOD PLANNING EXTENT PLAN	A
11035005/CC409	PEDESTRIAN BRIDGE DETAIL PLAN	A
11035005/CC410	PEDESTRIAN BRIDGE SECTIONS AND SETOUT TABLE	A
11035005/CC411	BOARDWALK DETAIL PLAN	A
11035005/CC412	BOARDWALK SECTIONS AND SETOUT TABLES	A
11035005/CC413	RAINGARDEN WEST DETAIL PLAN	A
11035005/CC414	MAIN OUTLET DETAIL PLAN	A
11035005/CC415	RAINGARDEN EAST DETAIL PLAN	A
11035005/CC416	MAIN OUTLET DETAILS AND SECTIONS	A
11035005/CC417	BASIN OUTLET PIT DETAILS	A
11035005/CC418	GENERAL RAINGARDEN DETAILS	A
11035005/CC419	RAINGARDEN MAINTENANCE TRACK DETAILS AND SETOUT TABLES	A
11035005/CC420	RAINGARDEN MAINTENANCE TRACK LONGITUDINAL SECTIONS	A
11035005/CC421	RAINGARDEN HEADWALL DETAILS	A
11035005/CC422	RAINGARDEN CONSTRUCTION STAGING DETAILS	A
11035005/CC423	EMBANKMENT DETAIL PLAN	B
11035005/CC424	EMBANKMENT LONG SECTION	A
11035005/CC425	EMBANKMENT DETAIL SHEET	B
11035005/CC426	GPT ACCESS PLAN	A
11035005/CC427	POCKET PARK DETAIL PLAN SHEET 1	A
11035005/CC428	POCKET PARK DETAIL PLAN SHEET 2	A
11035005/CC429	GENERAL DETAILS	A
11035005/CC430	STORMWATER PIT SCHEDULE AND CALCULATION TABLES	A
11035005/CC431	STORMWATER LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC432	STORMWATER LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC433	STORMWATER LONGITUDINAL SECTIONS SHEET 3	A
11035005/CC434	SETOUT TABLES AND FOOTPATH DETAILS	A
11035005/CC435	FOOTPATH LONGITUDINAL SECTIONS SHEET 1	A
11035005/CC436	FOOTPATH LONGITUDINAL SECTIONS SHEET 2	A
11035005/CC437	FOOTPATH LONGITUDINAL SECTIONS SHEET 3	A
11035005/CC438	FOOTPATH LONGITUDINAL SECTIONS SHEET 4	A
11035005/CC439	FOOTPATH LONGITUDINAL SECTIONS SHEET 5	A
11035005/CC440	FOOTPATH LONGITUDINAL SECTIONS SHEET 6	A
11035005/CC441	FOOTPATH LONGITUDINAL SECTIONS SHEET 7	A
11035005/CC442	FOOTPATH LONGITUDINAL SECTIONS SHEET 8	A
11035005/CC443	FOOTPATH LONGITUDINAL SECTIONS SHEET 9	A
11035005/CC444	SITE SECTION KEY PLAN	A
11035005/CC445	SITE SECTIONS SHEET 1	A
11035005/CC446	SITE SECTIONS SHEET 2	A
11035005/CC447	SITE SECTIONS SHEET 3	A
11035005/CC448	SITE SECTIONS SHEET 4	A
11035005/CC449	SITE SECTIONS SHEET 5	A
11035005/CC450	SOIL & WATER MANAGEMENT PLAN	A
11035005/CC451	SOIL & WATER MANAGEMENT NOTES	A
11035005/CC452	TURNING PATHS	A

GENERAL NOTES

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S "WORKS SPECIFICATION - CIVIL 2005".
2. SURVEY MARKS: -
   a. SURVEY MARKS SHOWN SHALL BE RETAINED AT ALL TIMES. WHERE RETENTION IS NOT POSSIBLE THE SUPERINTENDENT MUST BE NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL.
3. THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
4. THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE OWNERS. TO BE PROVIDED PRIOR TO THE APPROVAL OF THE PLANS.
5. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJOINING PROPERTIES.
6. COUNCIL'S TREE PRESERVATION ORDER MUST BE OBSERVED AND NO TREE SHALL BE FELLED, LOPPED OR REMOVED WITHOUT THE PRIOR APPROVAL OF COUNCIL'S ENGINEER.
7. TREES TO BE RETAINED ON SITE SHALL BE PROTECTED BY SUITABLE STURDY APPROVED PROTECTIVE FENCING PRIOR TO COMMENCEMENT OF SITE WORKS.
8. THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES, OUT-HOUSES, CAR BODIES AND DEBRIS ETC.
9. FILLING IS TO BE FROM A NOMINATED SOURCE, OF SOUND CLEAN MATERIAL, FREE FROM LARGE ROCK, STUMPS, CONTAMINATED MATTER, INDUSTRIAL AND BUILDING WASTE, ORGANIC MATTER AND OTHER DEBRIS. PLACING OF FILLING ON THE PREPARED AREAS SHALL NOT COMMENCE UNTIL THE AUTHORITY TO DO SO HAS BEEN OBTAINED FROM THE COUNCIL.
10. THE FILL MATERIAL THAT MAY BE RECEIVED AT THE DEVELOPMENT SITE ARE EXCAVATED NATURAL MATERIALS (VENM) AND EXCAVATED NATURAL MATERIAL (ENM) WITHIN THE MEANING OF THE PROTECTION OF THE ENVIRONMENTAL OPERATIONS ACT1997.
11. SITE FILL AREAS: - THE CONTRACTOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
12. ALL SITE FILLING TO BE COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY A REGISTERED SOIL LABORATORY IN ACCORDANCE WITH COUNCIL'S "WORKS SPECIFICATION".
13. ALL SITE REGRADING AREAS SHALL BE GRADED AT A MINIMUM 1% TO THE ENGINEER'S REQUIREMENTS.
14. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED BY THE SUPERINTENDENT.
15. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS.
16. DIMENSIONS OF ANY DETAIL SHALL NOT BE SCALED - DIMENSIONS, IF IN DOUBT, SHALL BE VERIFIED BY THE SUPERINTENDENT.
17. ALL CONSTRUCTION AND RESTORATION WORK ON COUNCIL'S ROAD AND FOOTPATH AREA ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED DRAWINGS AND COUNCIL'S STANDARD SPECIFICATIONS.
18. ALL WORKS TO BE IN ACCORDANCE WITH THE SALINITY MANAGEMENT PLAN BY GEOTECH TESTING PTY LTD 8537/2-AA

EXISTING SERVICES/UTILITIES NOTES

1. AT THE TIME OF DESIGN, WORK AS EXECUTED PLANS WERE NOT AVAILABLE FOR ALL SERVICES CONSTRUCTED WITH THE NEWPARK PRECINCT 2 AND CULVERT CROSSING WORKS.
2. THE LOCATION OF ALL EXISTING MANHOLES, LIGHT POLES, GROSS POLLUTANT TRAPS AND OTHER SERVICES IS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. ANY DISCREPANCIES BETWEEN DESIGN LEVELS AND EXISTING LEVELS ARE TO BE REPORTED TO THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORK

NOTE:
THESE PLANS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING
- THE ELARA SECTION 94 DETAILED CONCEPT PLANS BY J.WYNDHAM PRINCE 11035005/DC01 - 72
- LANDSCAPED CHANNEL TC01 PART 2 2 ML 1.17, REFER TO J.WYNDHAM PRINCE 11035005/CC350-CC382
- LANDSCAPE PLANS BY PATERSON DESIGN STUDIO
- WINTEN CULVERT CROSSING PLAN BY J.WYNDHAM PRINCE 998509/CC100-CC113

SURFACE NOTES

1. BATTER SLOPES ARE TYPICALLY 1v:4h UNLESS NOTED OTHER WISE.

SURVEY SET OUT INFORMATION NOTES:

1. ALL SITE SET OUT AND CONTROL POINTS ARE TO BE CERTIFIED BY A REGISTERED SURVEYOR.
2. THE INFORMATION DETAILED ON THE CERTIFIED CONSTRUCTION CERTIFICATE PLANS TAKES PRECEDENCE OVER ALL ELECTRONIC INFORMATION PROVIDED. THE ORDER OF PRIORITY FOR USE OF ALL INFORMATION PROVIDED IS AS FOLLOWS:
   a. CERTIFIED CONSTRUCTION CERTIFICATE DRAWINGS
   b. 2D DRAFTING BASE (ELECTRONIC FILE)
   c. 3D DTM (ELECTRONIC FILE)
3. ANY DISCREPANCY BETWEEN ANY OF THE INFORMATION CONTAINED WITHIN THESE FILES IS TO BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT PRIOR TO CONSTRUCTION WHO WILL SEEK CLARIFICATION AND ISSUE INSTRUCTIONS ON THE APPROPRIATE COURSE OF ACTION.

STORMWATER NOTES

1. STORMWATER DESIGN CRITERIA:

   ANNUAL EXCEEDANCE PROBABILITY (AEP):
   1% AEP MAJOR SYSTEM
   10% AEP MINOR SYSTEM
2. PIPES TO BE INSTALLED TO TYPE HS2 SUPPORT IN ACCORDANCE WITH AS 3725 (1989) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 300mm LAYERS TO MINIMUM 100% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
3. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
4. GRATES AND COVERS SHALL CONFORM TO AS 3996.
5. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
6. DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH NON-COHESIVE SAND AND HAVE 3m OF SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK, DISCHARGING INTO DOWN STREAM PITS. FOR PIPELINES GREATER THAN 525Ø, SUBSOIL DRAIN SHALL BE PROVIDED ON BOTH SIDES OF THE TRENCH.
7. ALL STORMWATER PIPES WITHIN ROADS TO BE REINFORCED CONCRETE PIPE (RRJ) CLASS 2 OR FRC CLASS 2 UNLESS NOTED OTHERWISE.
8. DRAINAGE LINES ON PLANS ARE DIAGRAMMATIC ONLY AND PIPE CENTRELINES SHALL ENTER AND EXIT PITS AT THE CENTRE OF THE RESPECTIVE PIT WALLS.
9. STEP IRONS REQUIRED WHERE THE PIT EXCEEDS 1200 IN DEPTH. REFER TO COUNCIL DRAWING A(BS)107M.

ON-SITE DETENTION CONSTRUCTION TOLERANCE NOTES

THE OPERATION OF THE ON-SITE DETENTION SYSTEM IS HIGHLY SENSITIVE TO THE FOLLOWING ELEMENTS WITHIN THE BASIN. THE CONTRACTOR IS TO ENSURE THAT:

ELEMENT	TOLERANCE
WEIR LEVELS	+25mm, -0mm
WEIR LENGTHS	±50mm
PIT LEVELS (PITS 01/1, 02/1 & 04/1 ONLY)	+15mm, -0mm
PIPE LEVELS AND GRADES	±15mm, ±0.2%

A REGISTERED SURVEYOR SHALL BE USED TO SET OUT THE CONSTRUCTION OF THESE ELEMENTS FOR BOTH LINE AND LEVEL AND IS REQUIRED TO PROVIDE A DETAILED WORK AS EXECUTED SURVEY IN ORDER TO CONFIRM THAT THE CRITICAL ELEMENTS COMPLY WITH THE INTENT OF THE DESIGN.

SURVEYED BY:
BMD BULK EARTHWORKS SURFACE
CAD REFERENCE: tin BEW 171214.12daz
DATE RECEIVED: 29/01/2018

CRAIG & RHODES DRONE SURVEY
CAD REFERENCE: 20180213_C&R_MARSDEN-PARK_ELEVATION.dwg
DATE RECEIVED: 22/02/2018

www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG

UTILITIES SHOWN ARE DIAGRAMMATIC ONLY, CONTRACTORS ARE RESPONSIBLE TO LOCATE AND AVOID DAMAGE TO THEM AS SPECIFIED BY EACH UTILITIES EXCAVATION GUIDE LINES & STANDARDS.

NOTE: UTILITIES SHOWN MAY NOT INCLUDE ALL SERVICES WITHIN THE LIMIT OF WORKS

B	INDEX UPDATED	PAS	PAS	AM	MS	22/11/18
A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S7.11 WORKS
BASIN 3
GENERAL NOTES, LEGEND & INDEX

PLAN No: 11035005/CC401 B
FILE No: 11035005CC401
SHEET SIZE: A1 ORIGINAL

Plotted: 28 November , 2018 11:00:48 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC401.dwg

CC403

GECKO STREET

ROAD B1

HERON STREET

THORNBILL STREET

STARLING STREET

NEWPARK PRECINCT 2

MILNES PARADE

HOOKINGS AVENUE

CC405

SUNDEW PARADE

RAINGARDEN EAST

RAINGARDEN WEST

BASIN 3

SECTION 7.11 CHANNEL
REFER TO PLANS
11035005/CC350-CC382

REFER TO
998509/CC100-CC113
FOR DETAILS

ELARA BULEVARD

ROAD C1

ROAD C5

ROAD C4

NEWPARK PRECINCT 4

ROAD C7

ROAD C6

LITTLE CREEK

CC404

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100

METRES

CLIENT:

Stockland

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ELARA S7.11 WORKS
BASIN 3
OVERALL ARRANGEMENT PLAN

PLAN No: 11035005/CC402 A

FILE No: 11035005CC402

SHEET SIZE: A1 ORIGINAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:

DATUM:

ORIGIN:

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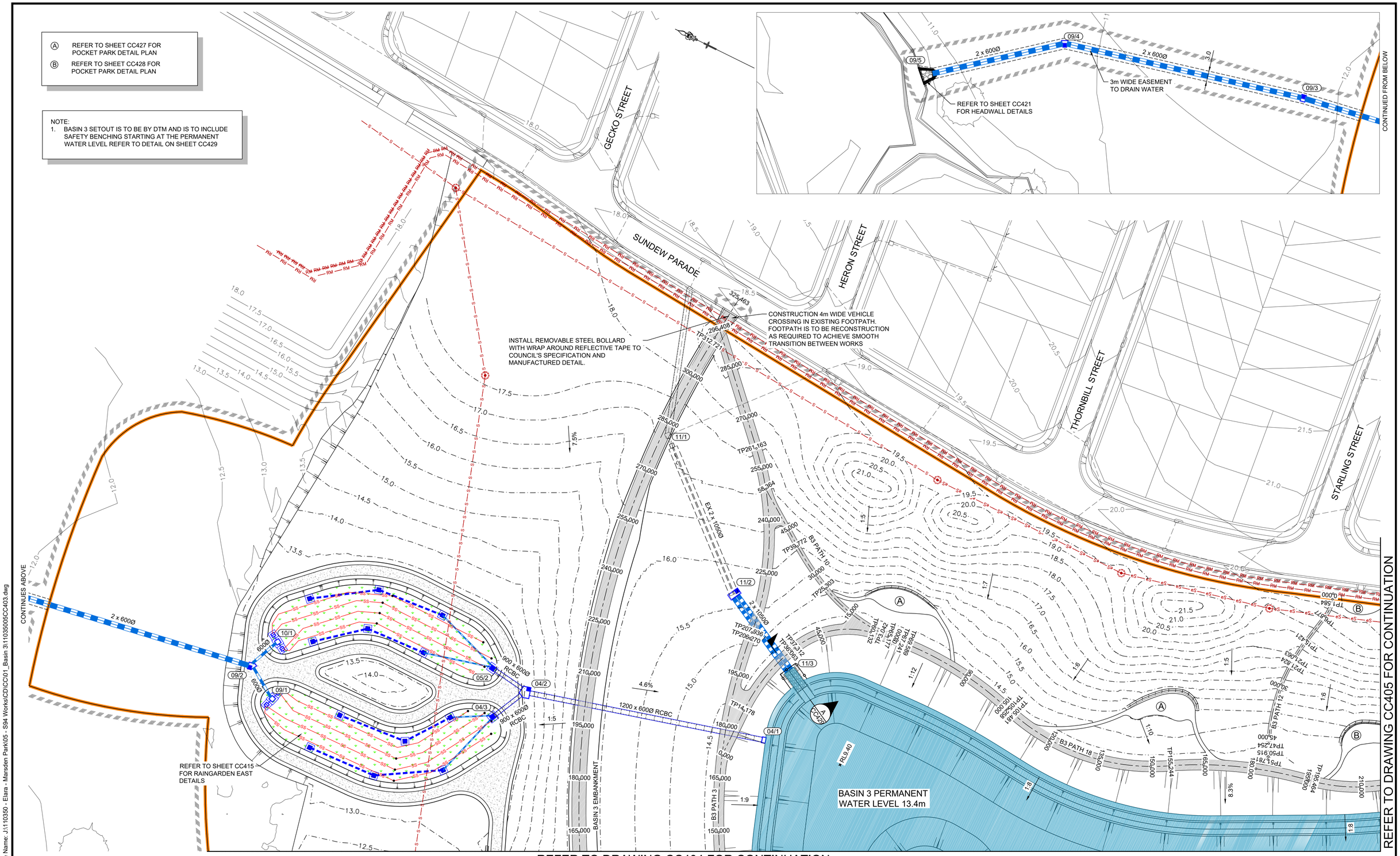
Ⓐ REFER TO SHEET CC427 FOR POCKET PARK DETAIL PLAN

Ⓑ REFER TO SHEET CC428 FOR POCKET PARK DETAIL PLAN

NOTE:
1. BASIN 3 SETOUT IS TO BE BY DTM AND IS TO INCLUDE SAFETY BENCHING STARTING AT THE PERMANENT WATER LEVEL REFER TO DETAIL ON SHEET CC429



REFER TO DRAWING CC404 FOR CONTINUATION

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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ELARA S7.11 WORKS
BASIN 3
ENGINEERING PLAN
SHEET 1

PLAN No: 11035005/CC403 A
FILE No: 11035005CC403
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:47:27 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC403.dwg

REFER TO DRAWING CC403 FOR CONTINUATION

REFER TO DRAWING CC405 FOR CONTINUATION

REFER TO SHEET CC416 FOR BASIN 3 MAIN OUTLET DETAILS

REFER TO SHEET CC421 FOR HEADWALL DETAILS

3m WIDE EASEMENT TO DRAIN WATER

REFER TO SHEET CC413 FOR RAINGARDEN WEST DETAILS

BASIN 3 EMBANKMENT

BASIN 3 PERMANENT WATER LEVEL 13.4m

REFER TO SHEET CC411 FOR BOARDWALK DETAIL PLAN

GATE TO LANDSCAPE ARCHITECTS DETAIL

INSTALL REMOVABLE STEEL BOLLARD WITH WRAP AROUND REFLECTIVE TAPE TO COUNCIL'S SPECIFICATION AND MANUFACTURED DETAIL.

CONSTRUCTION 4m WIDE VEHICLE CROSSING IN EXISTING FOOTPATH. FOOTPATH IS TO BE RECONSTRUCTION AS REQUIRED TO ACHIEVE SMOOTH TRANSITION BETWEEN WORKS

NOTE:
1. BASIN 3 SETOUT IS TO BE BY DTM AND IS TO INCLUDE SAFETY BENCHING STARTING AT THE PERMANENT WATER LEVEL REFER TO DETAIL ON SHEET CC429

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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ELARA S7.11 WORKS
BASIN 3
ENGINEERING PLAN
SHEET 2

PLAN No: 11035005/CC404 A
FILE No: 11035005CC404
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:48:08 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC404.dwg

REFER TO DRAWING CC403 FOR CONTINUATION

REFER TO DRAWING CC404 FOR CONTINUATION

NOTE:
1. BASIN 3 SETOUT IS TO BE BY DTM AND IS TO INCLUDE SAFETY BENCHING STARTING AT THE PERMANENT WATER LEVEL REFER TO DETAIL ON SHEET CC429

Ⓐ REFER TO SHEET CC427 FOR POCKET PARK DETAIL PLAN

Ⓑ REFER TO SHEET CC428 FOR POCKET PARK DETAIL PLAN

MILNES PARADE

HOOKINGS AVENUE

SUNDEW PARADE

ELARA BULEVARD

ROAD C1

ROAD C7

BASIN 3 PERMANENT WATER LEVEL 13.4m

REFER TO SHEET CC426 FOR GPT ACCESS DETAIL PLAN

REFER TO SHEET CC409 FOR PEDESTRIAN BRIDGE DETAIL PLAN

SECTION 7.11 CHANNEL REFER TO PLANS 11035005/CC350-CC382

REFER TO 998509/CC100-CC113 FOR DETAILS

REFER TO SHEET CC411 FOR BOARDWALK DETAIL PLAN

REFER TO LANDSCAPE PLANS FOR BARBEQUE DETAILS

B3 PATH 1 · B3 PATH 2 · B3 PATH 4 · B3 PATH 5 · B3 PATH 6 · B3 PATH 7 · B3 PATH 8 · B3 PATH 11 · B3 PATH 12 · B3 PATH 14 · B3 PATH 15 · B3 PATH 18 · B3 GPT ACCESS 1

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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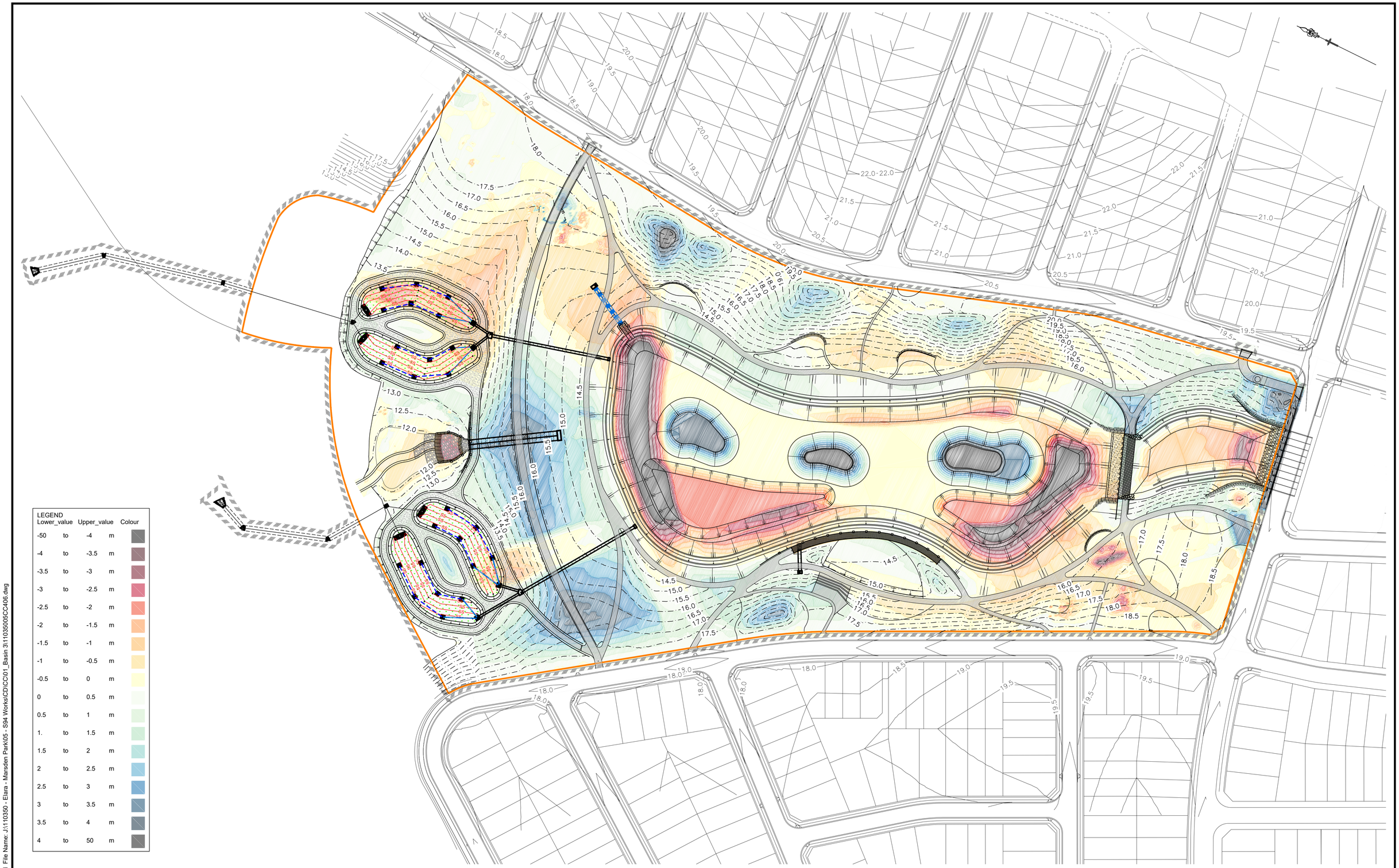
AZIMUTH:
DATUM:
ORIGIN:

ELARA S7.11 WORKS
BASIN 3
ENGINEERING PLAN
SHEET 3

PLAN No: 11035005/CC405 A
FILE No: 11035005CC405
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:48:44 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC405.dwg



LEGEND

Lower_value		Upper_value		Colour
-50	to	-4	m	
-4	to	-3.5	m	
-3.5	to	-3	m	
-3	to	-2.5	m	
-2.5	to	-2	m	
-2	to	-1.5	m	
-1.5	to	-1	m	
-1	to	-0.5	m	
-0.5	to	0	m	
0	to	0.5	m	
0.5	to	1	m	
1.	to	1.5	m	
1.5	to	2	m	
2	to	2.5	m	
2.5	to	3	m	
3	to	3.5	m	
3.5	to	4	m	
4	to	50	m	

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S7.11 WORKS
BASIN 3
CUT AND FILL PLAN

PLAN No: 11035005/CC406 A
FILE No: 11035005CC406
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:49:32 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC406.dwg

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100

METRES

CLIENT:

Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:

DATUM:

ORIGIN:

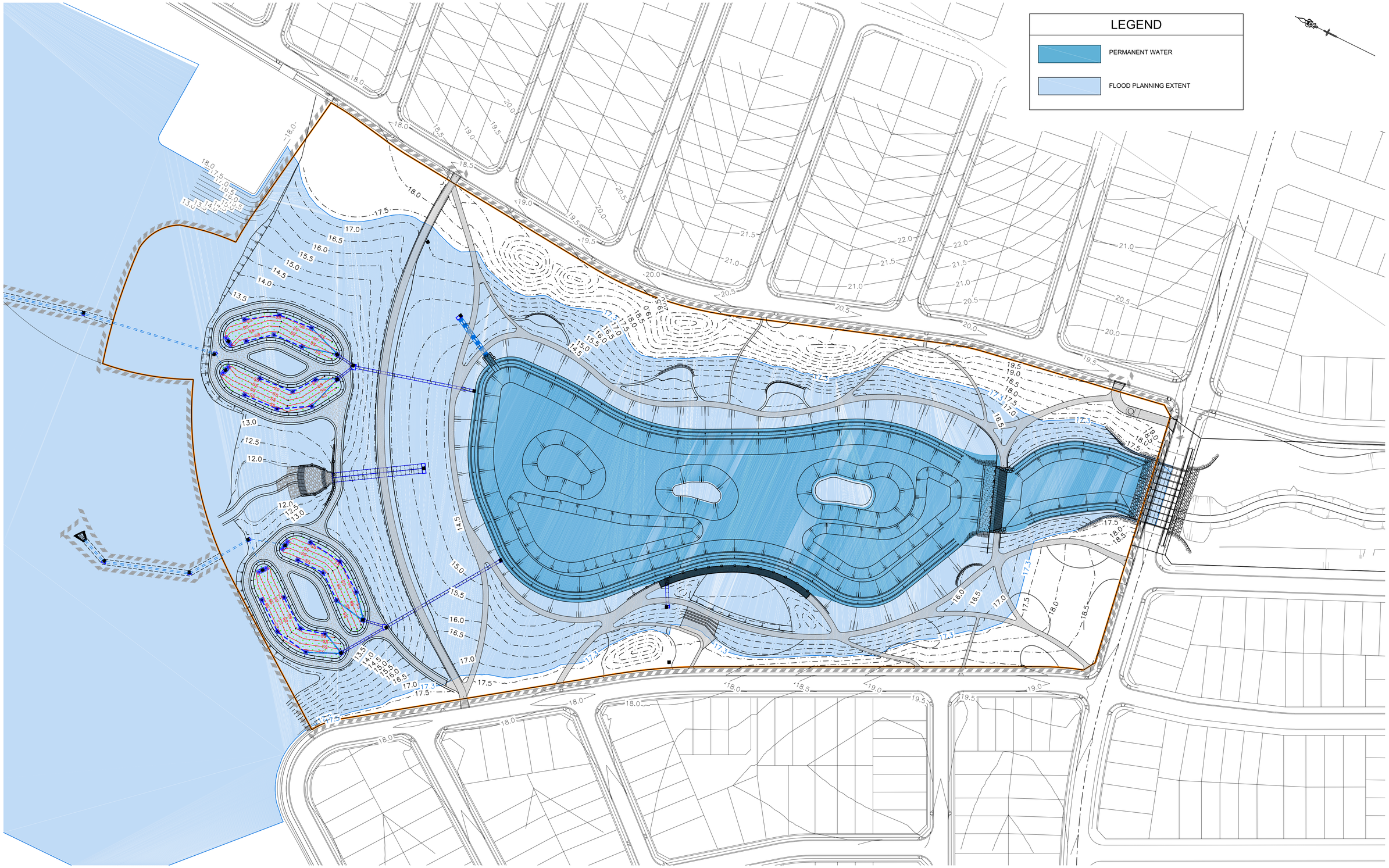
ELARA S7.11 WORKS
BASIN 3
PAVEMENT AND GROUND COVER PLAN

PLAN No: 11035005/CC407 A

FILE No: 11035005CC407

SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:49:47 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC01_Basin 3\11035005CC407.dwg



1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

CLIENT:

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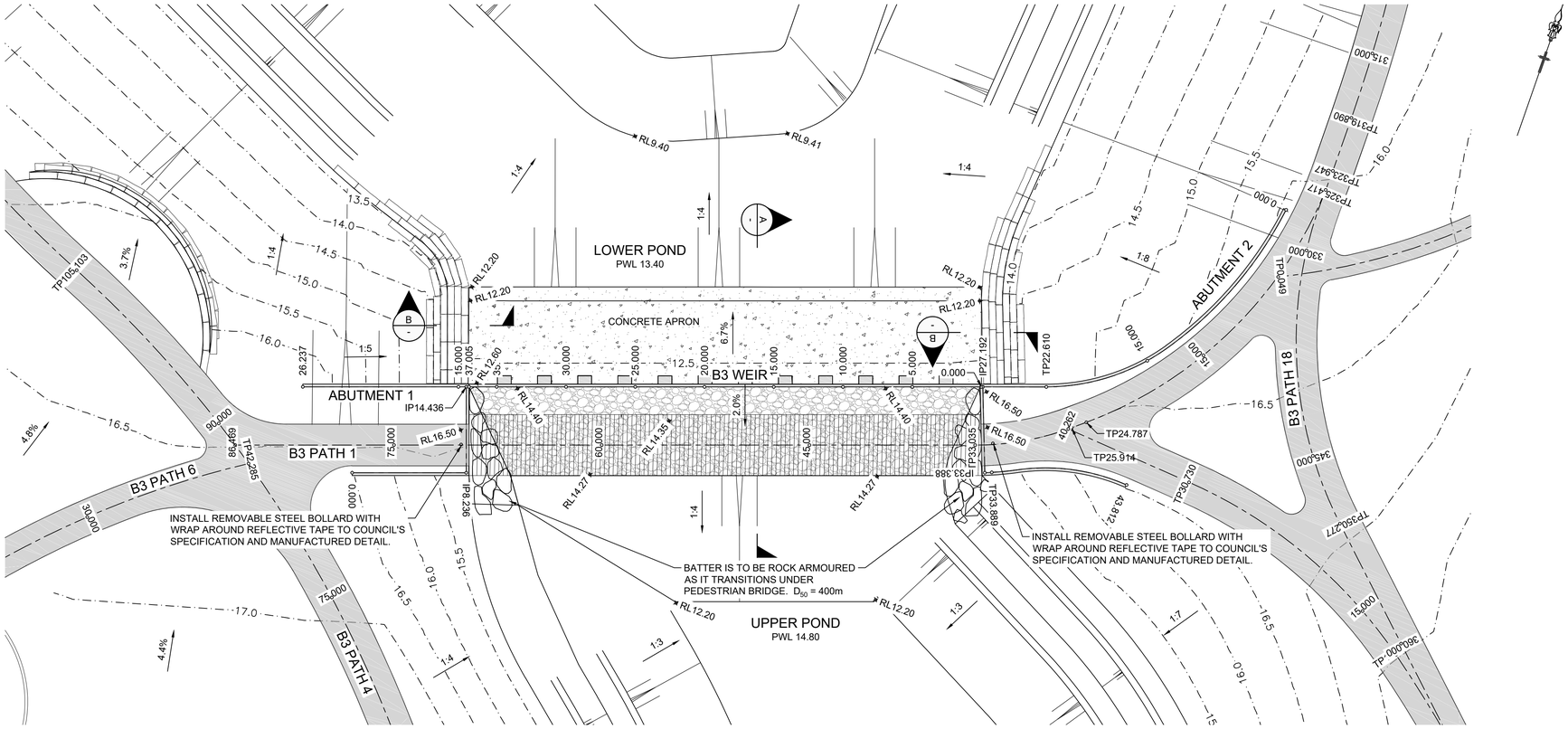
AZIMUTH:
DATUM:
ORIGIN:

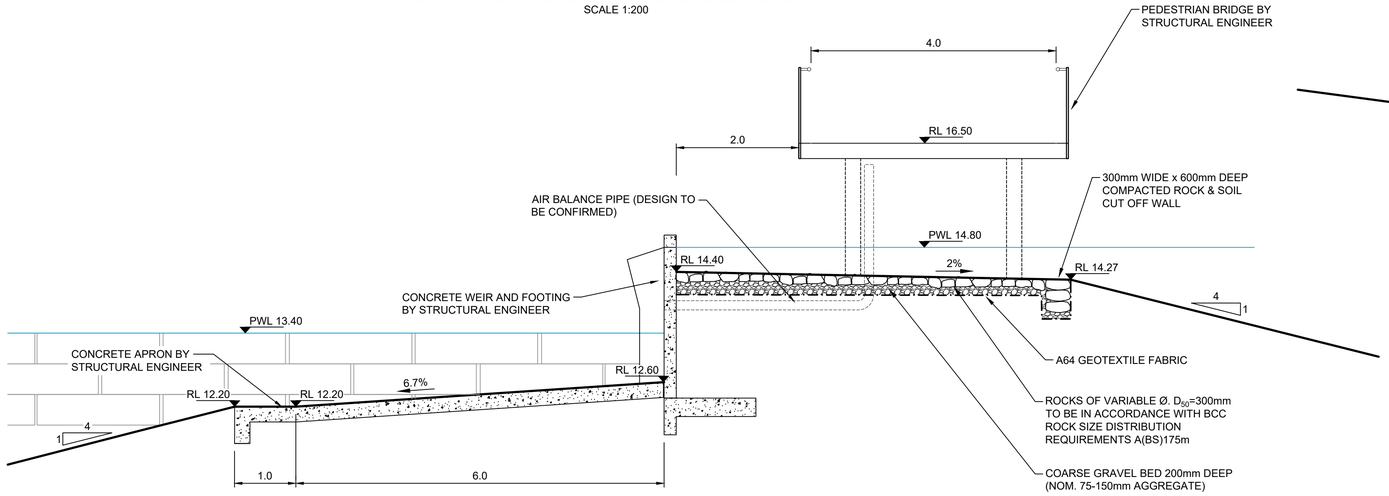
ELARA S7.11 WORKS
BASIN 3
FLOOD PLANNING EXTENT PLAN

PLAN No: 11035005/CC408 A
FILE No: 11035005CC408
SHEET SIZE: A1 ORIGINAL

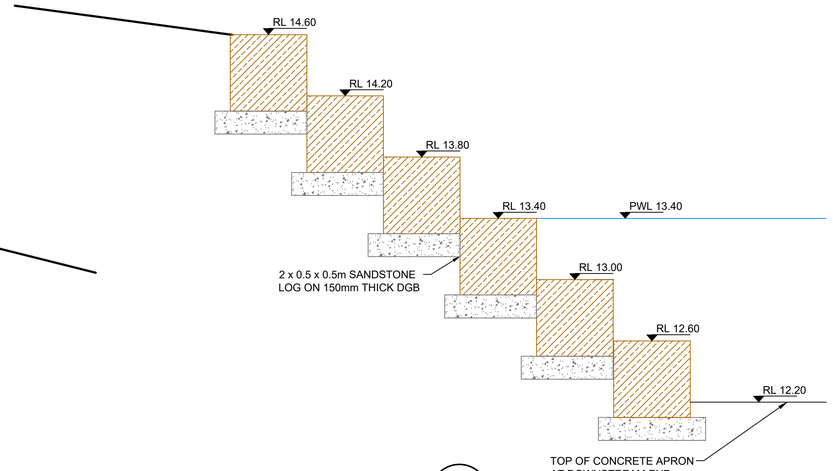
Plotted: 15 November , 2018 4:50:18 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC408.dwg



BASIN 3 WEIR AND PEDESTRIAN BRIDGE DETAIL PLAN
SCALE 1:200



SECTION A
SCALE H 1:50
V 1:50



SECTION B
SCALE H 1:50
V 1:50

1:50 (AT A1)
1:100 (AT A3)
1 0 1 2 3 4 5
METRES

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

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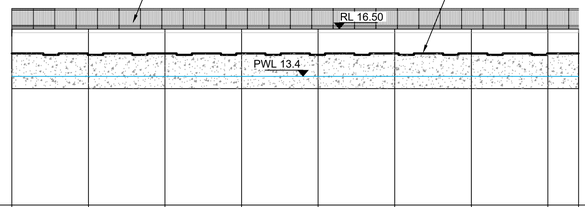
ELARA S7.11 WORKS
BASIN 3
PEDESTRIAN BRIDGE DETAIL PLAN

PLAN No: 11035005/CC409 A
FILE No: 11035005CC409
SHEET SIZE: A1 ORIGINAL

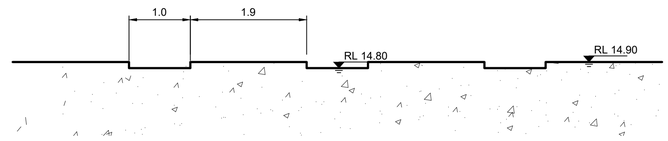
Plotted: 15 November , 2018 4:50:34 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC409.dwg



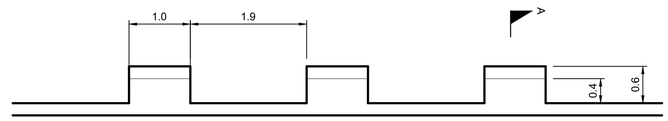
DATUM 5.0										
WAE										
TOP OF WALL	14.900	14.900	14.900	14.900	14.900	14.900	14.900	14.900	14.900	
CL OF PATH 1 LEVEL	16.500	16.500	16.500	16.500	16.500	16.500	16.500	16.500	16.500	
BOTTOM OF WALL	12.600	12.600	12.600	12.600	12.600	12.600	12.600	12.600		
CHAINAGE	0.000	5.000	10.000	15.000	20.000	25.000	30.000	35.000	37.005	

LONGITUDINAL SECTION B3 WEIR

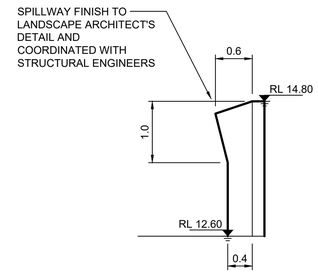
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



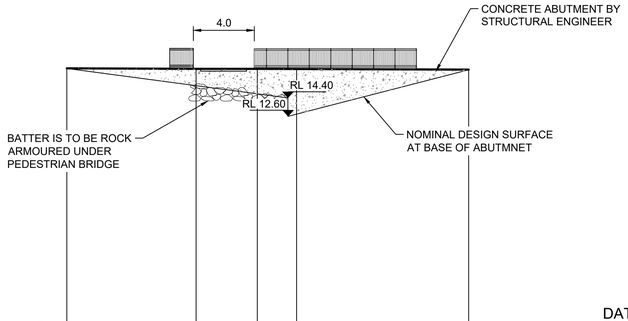
TYPICAL WEIR STEP DETAIL
SCALE 1:50



TYPICAL WEIR PLAN DETAIL
SCALE 1:50



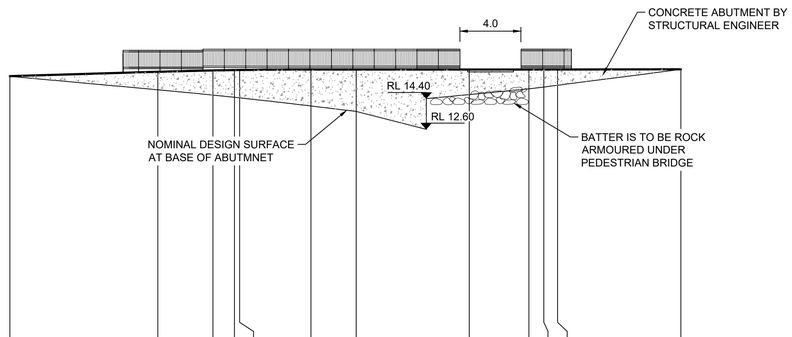
SECTION A
SCALE H 1:50
V 1:50



DATUM 0.0								
WAE								
TOP OF WALL	16.537	16.500	16.500	16.491	16.450			
BOTTOM OF WALL	16.527	15.273	14.824	13.543				
CHAINAGE	0.000	8.437	12.437	15.000	26.237			

LONGITUDINAL SECTION ABUTMENT 1

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200



DATUM -1.0																
WAE																
TOP OF WALL	16.067	16.352	16.439	16.463	16.468	16.500	16.500	16.500	16.500	16.500	16.502	16.518				
BOTTOM OF WALL	16.057	15.178	14.832	14.686	14.650	14.120	13.765	14.866	15.235	15.358	15.474	15.144				
CHAINAGE	0.000	9.662	13.256	14.662	15.000	19.662	22.610	30.000	33.889	34.864	35.762	43.812				

LONGITUDINAL SECTION ABUTMENT 2

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

ABUTMENT 1

CHAINAGE	EASTING	NORTHING	BEARING
0	296587.42	6269433.22	69°34'37.07"
8.24	296595.14	6269436.1	
14.44	296592.97	6269441.91	
26.24	296581.91	6269437.79	249°34'37.07"

ABUTMENT 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296643.99	6269474.55	186°37'24.57"		
6.63	296643.22	6269467.84		27.9	13.26
13.26	296639.45	6269462.23	213°50'48.27"		
17.93	296636.76	6269458.21		15	9.35
22.61	296632.23	6269456.53	249°34'36.96"		
27.19	296627.94	6269454.93			
33.39	296630.23	6269449.17			
33.89	296630.69	6269449.37			
34.83	296631.55	6269449.74		-21.93	1.87
35.76	296632.37	6269450.19			
39.79	296636	6269452.16		14.5	8.05
43.81	296640.13	6269451.92	93°21'50.71"		

B3 WEIR

CHAINAGE	EASTING	NORTHING	BEARING
0	296627.84	6269454.89	249°34'36.96"
37.01	296593.16	6269441.98	249°34'36.96"

NOTE: EMBEDMENT DEPTH, FOOTING LEVELS AND DETAILS AS PER STRUCTURAL ENGINEERING PLANS.

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

1:200 (AT A1) 1:400 (AT A3) 4 2 0 4 8 12 16 20 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
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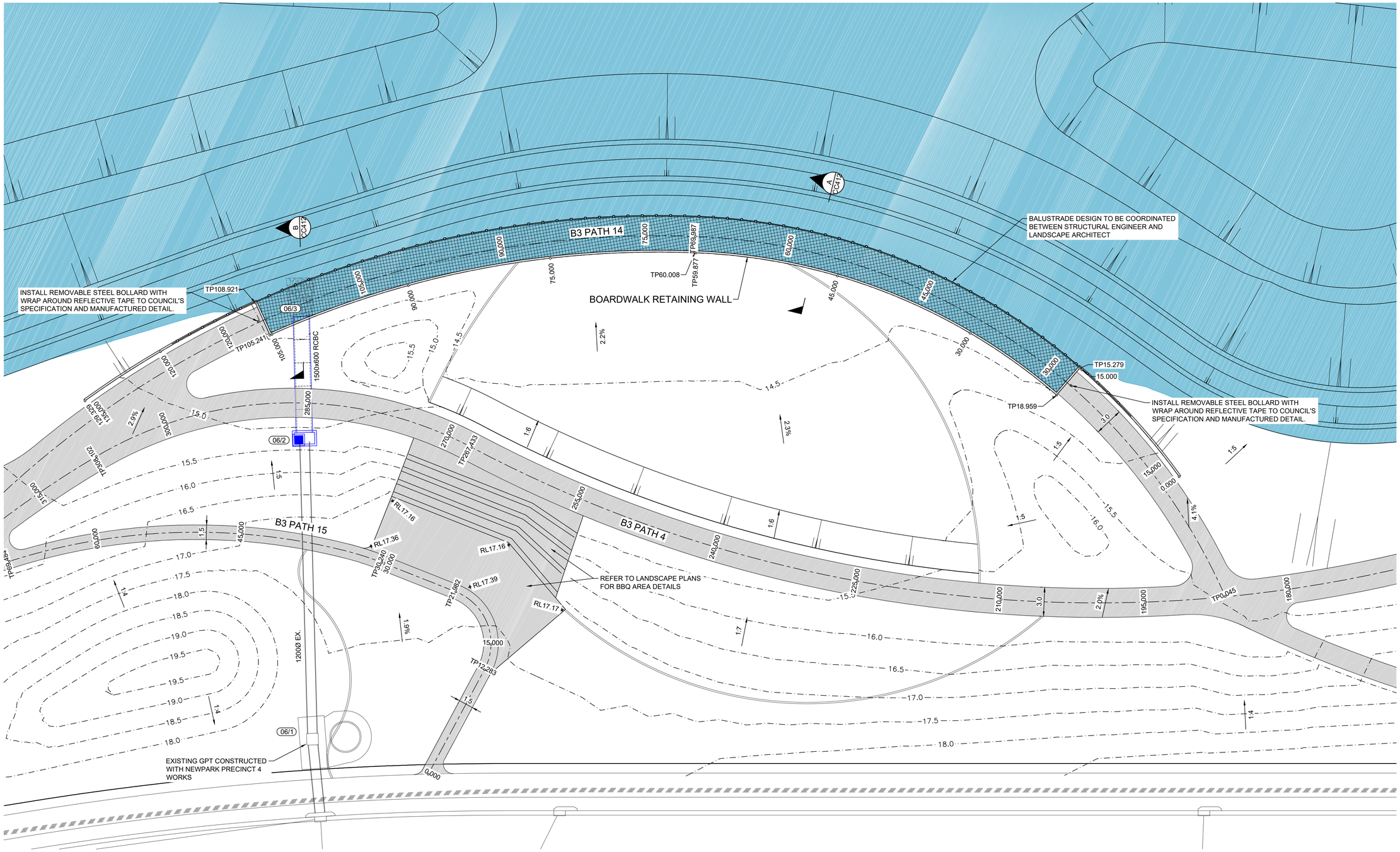
ELARA S7.11 WORKS
BASIN 3
PEDESTRIAN BRIDGE SECTIONS AND SETOUT TABLE

PLAN No: 11035005/CC410 A
FILE No: 11035005CC410
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:50:40 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC410.dwg



1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

CLIENT:

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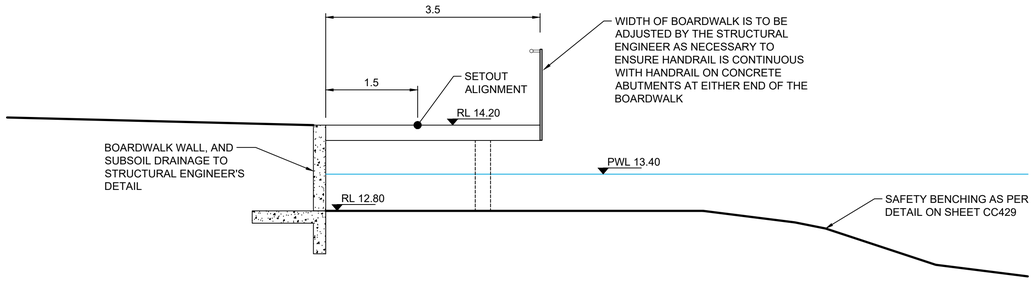
AZIMUTH:
DATUM:
ORIGIN:

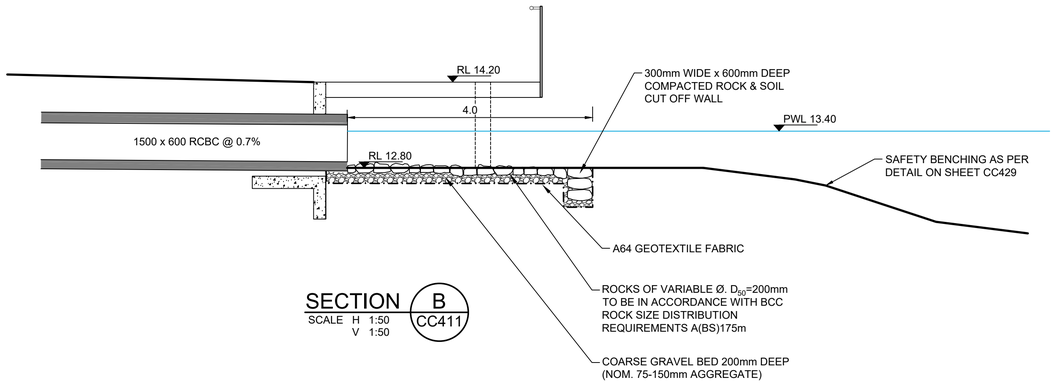
ELARA S7.11 WORKS
BASIN 3
BOARDWALK DETAIL PLAN

PLAN No: 11035005/CC411 A
FILE No: 11035005CC411
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:51:05 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC411.dwg



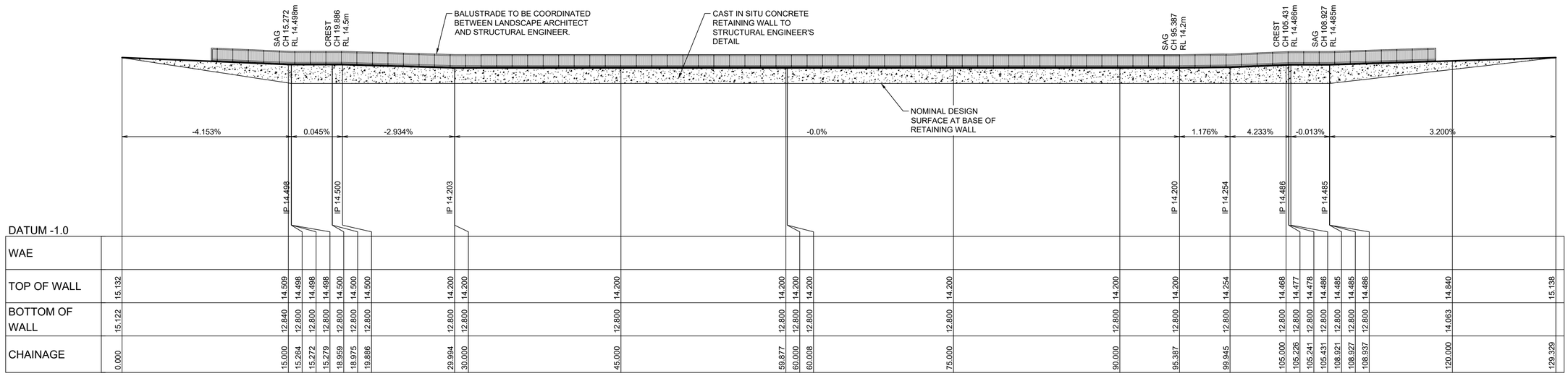
SECTION A CC411
SCALE H 1:50
V 1:50



SECTION B CC411
SCALE H 1:50
V 1:50

NOTE: EMBEDMENT DEPTH, FOOTING LEVELS AND DETAILS AS PER STRUCTURAL ENGINEERING PLANS.

BOARDWALK RETAINING WALL					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296512.18	6269502.61	28°08'07.04"	-64.5	15.26
7.63	296515.79	6269509.37			
15.26	296517.72	6269516.79		-0.01	0.02
15.27	296517.73	6269516.8			
15.28	296517.72	6269516.8	284°34'03.53"		
18.96	296514.15	6269517.73		0.01	0.02
18.97	296514.15	6269517.73			
18.97	296514.15	6269517.74		-60.8	40.9
39.43	296519.49	6269538.32			
59.88	296510.85	6269557.74	336°00'48.10"		
60.01	296510.8	6269557.86	336°00'48.10"	-97.9	45.22
82.62	296501.44	6269578.89			
105.23	296483.69	6269593.55		0.01	0.02
105.23	296483.68	6269593.56			
105.24	296483.69	6269593.56			
108.92	296486.03	6269596.4		-0.01	0.02
108.93	296486.04	6269596.41			
108.94	296486.03	6269596.42		-101.6	20.39
119.13	296478.14	6269602.93			
129.33	296469.11	6269607.74	298°02'19.09"		



LONGITUDINAL SECTION BOARDWALK RETAINING WALL
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

1:50 (AT A1)
1:100 (AT A3)
1 0 1 2 3 4 5
METRES

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

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ELARA S7.11 WORKS
BASIN 3
BOARDWALK SECTIONS AND SETOUT TABLES

PLAN No: 11035005/CC412 A
FILE No: 11035005CC412
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:51:12 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC412.dwg

MAINTENANCE TRACK IS TO HAVE 25m OF REVERSE CROSS FALL TO DIRECT EXCESS STORMWATER RUNOFF TO MAIN OUTLET STRUCTURE

ACCESS 2

RAINGARDEN OUTLET PIT. REFER CC418 FOR DETAILS.

MEDIA BED 2
AREA: 934 m²
RL: 12.90

RAINGARDEN OUTLET PIT. REFER CC418 FOR DETAILS.

LANDSCAPE AREA

MEDIA BED 1
AREA: 970 m²
RL: 12.90

WESTERN PERIMETER

RAINGARDEN INLET PIT. REFER CC418 FOR DETAILS.

RAINGARDEN INLET PIT. REFER CC418 FOR DETAILS.

1200 x 600 RCBC

900 x 600 RCBC

900 x 600 RCBC

SEALED LID.

HEAVY DUTY CONCRETE MAINTENANCE TRACK 125mm THICK CONCRETE WITH SL82 MESH WITH 35m TOP COVER

ACCESS 1

LEGEND

- RAINGARDEN MEDIA BED
- MAINTENANCE TRACK - HEAVY DUTY CONCRETE
- MAINTENANCE TRACK - CRUSHED SANDSTONE
- RIP RAP SCOUR PROTECTION
- NATIVE VEGETATION RETENTION AREA
- EXISTING NATIVE VEGETATION AREA
- PROPOSED STORMWATER PIPE & PIT
- EXISTING STORMWATER
- RAINGARDEN PERMEABLE PIPE
- FLUSHING POINT — SUBSOIL DRAINAGE LINE
- PROPOSED SERVICES - WATER
- PROPOSED SERVICES - SEWER
- PROPOSED SERVICES - ELECTRICAL
- SP2 BOUNDARY
- LIMIT OF WORKS
- * DENOTES UPFLOW PIT FOR TYPICAL DETAIL REFER CC418

NOTE:
ALL PIPES WITHIN RAINGARDEN HAVE 0% GRADE (FLAT)

1:200 (AT A1)
1:400 (AT A3)

METRES

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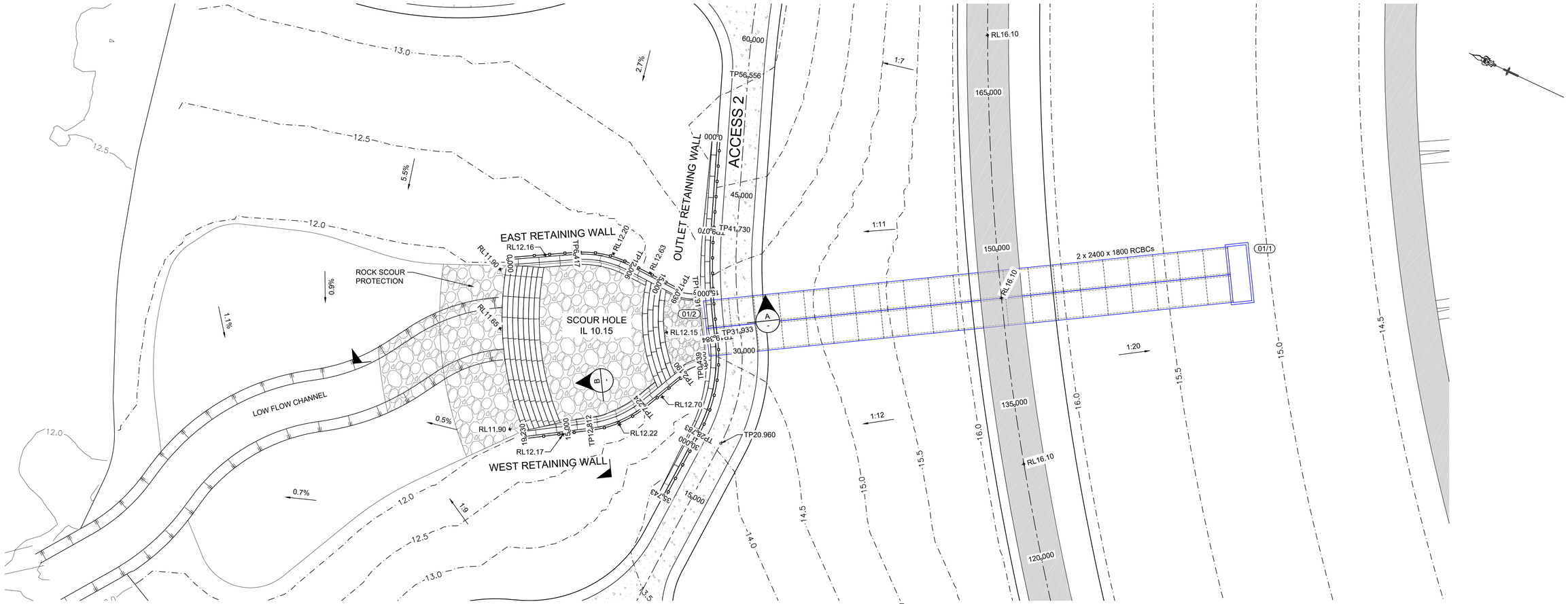
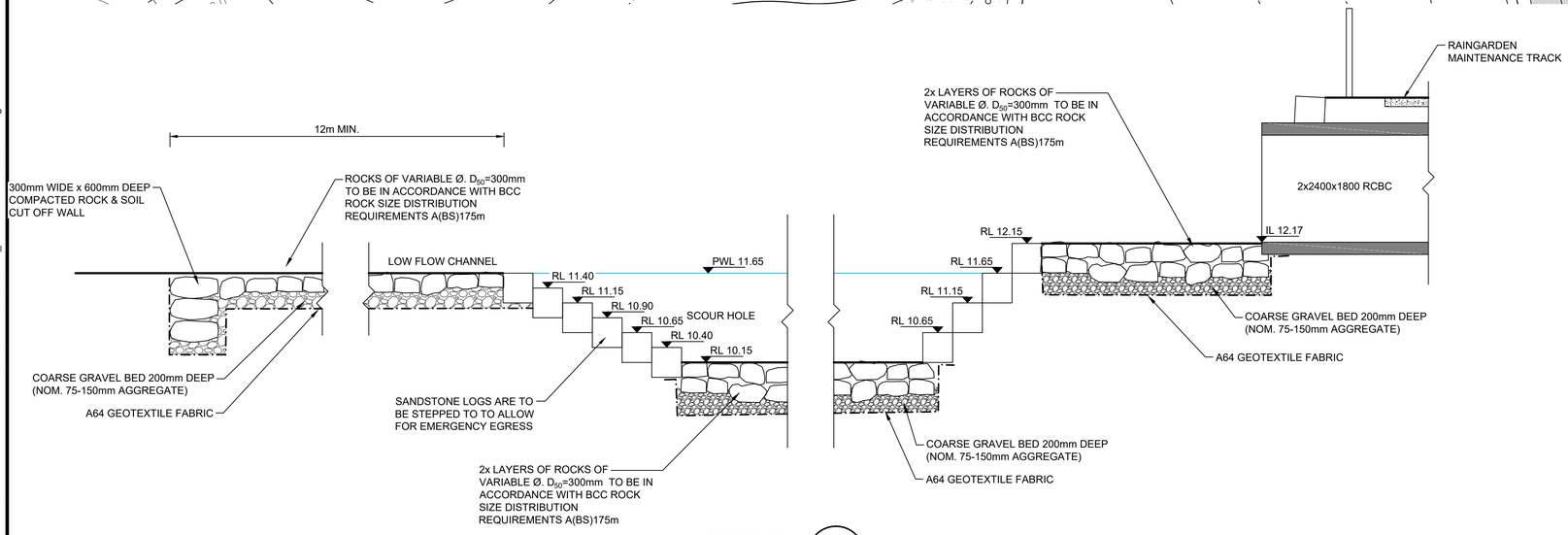
ELARA S7.11 WORKS
BASIN 3
RAINGARDEN WEST DETAIL PLAN

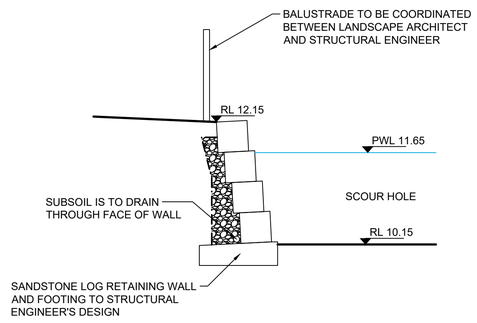
PLAN No: 11035005/CC413 A
FILE No: 11035005CC413
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:51:37 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC413.dwg





SECTION A
SCALE H 1:50
V 1:50



SECTION B
SCALE H 1:50
V 1:50

1:50 (AT A1)
1:100 (AT A3)
1 0 1 2 3 4 5
METRES

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
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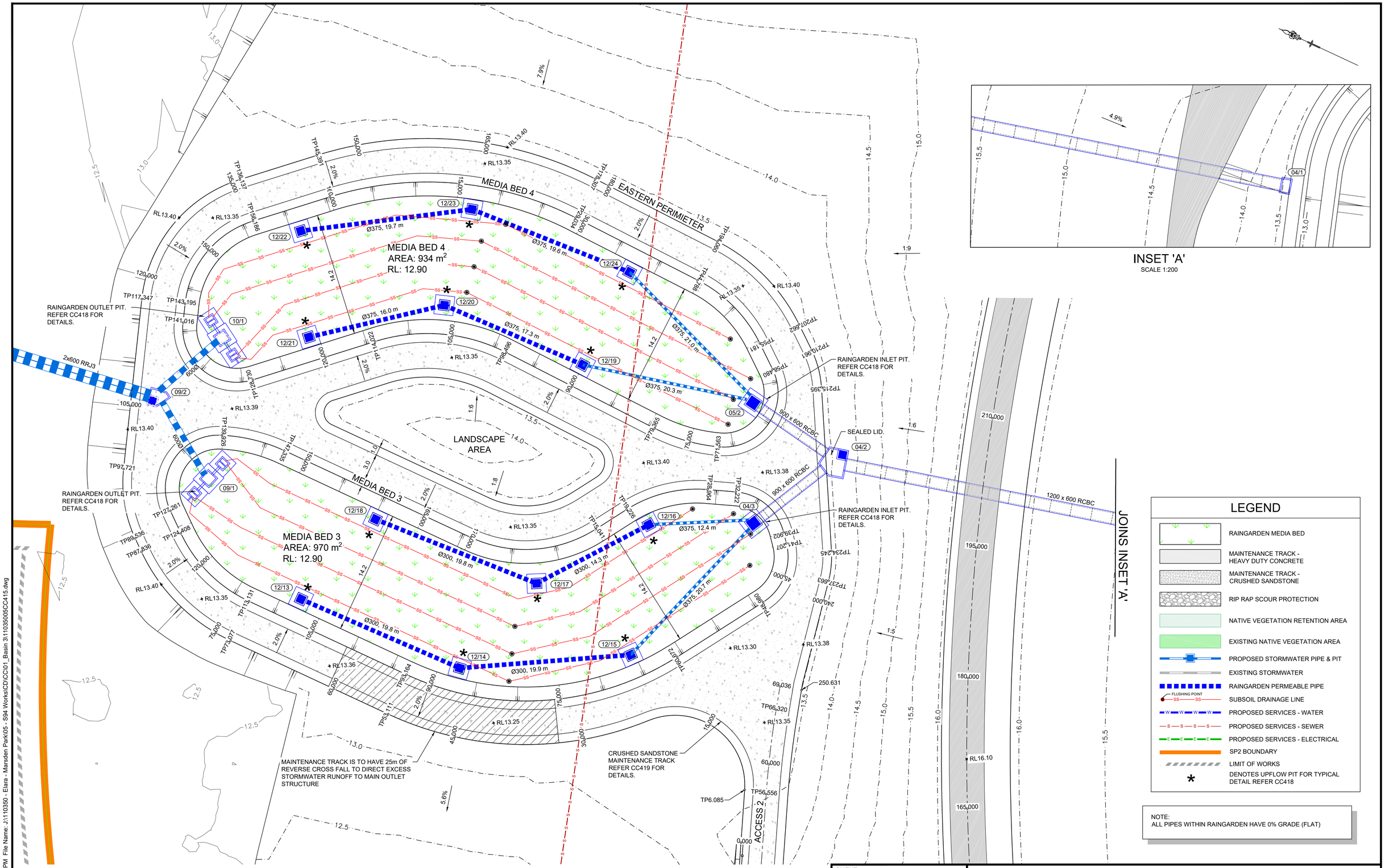
ELARA S7.11 WORKS
BASIN 3
MAIN OUTLET DETAIL PLAN

PLAN No: 11035005/CC414 A
FILE No: 11035005CC414
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:51:56 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC414.dwg



A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
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ORIGIN:

CLIENT: Stockland

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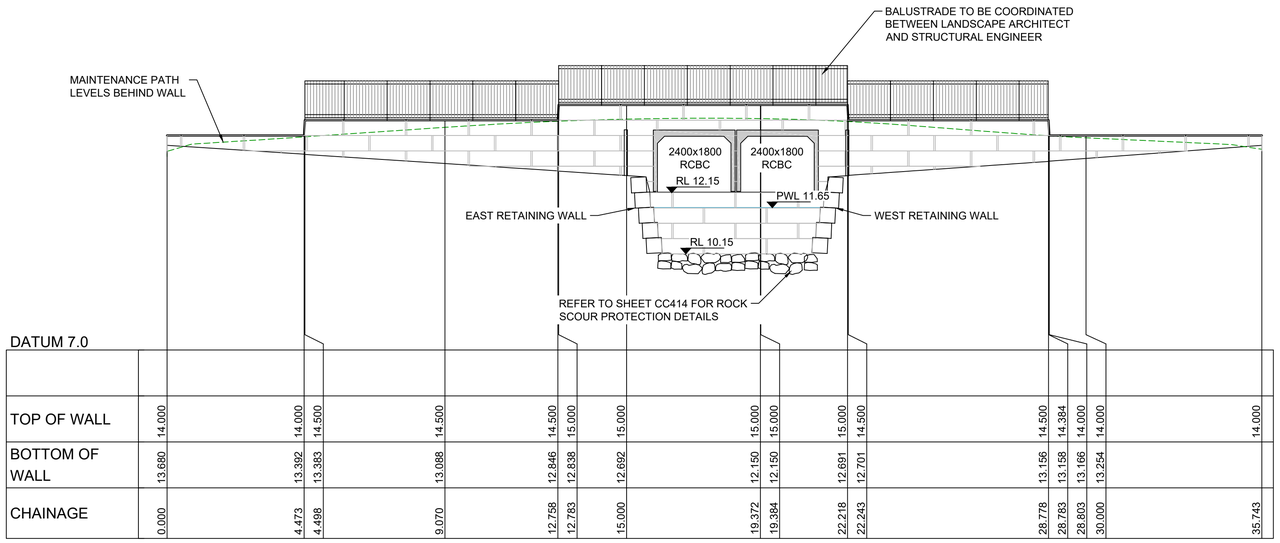
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S7.11 WORKS
BASIN 3
RAINGARDEN EAST DETAIL PLAN

PLAN No: 11035005/CC415 A
FILE No: 11035005CC415
SHEET SIZE: A1 ORIGINAL

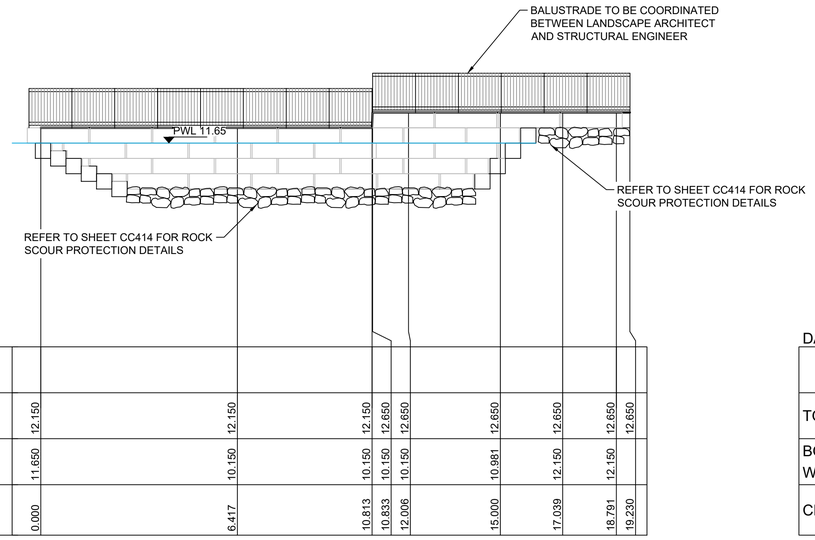
Plotted: 15 November , 2018 4:52:27 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC415.dwg



LONGITUDINAL SECTION OSD OUTLET RETAINING WALL

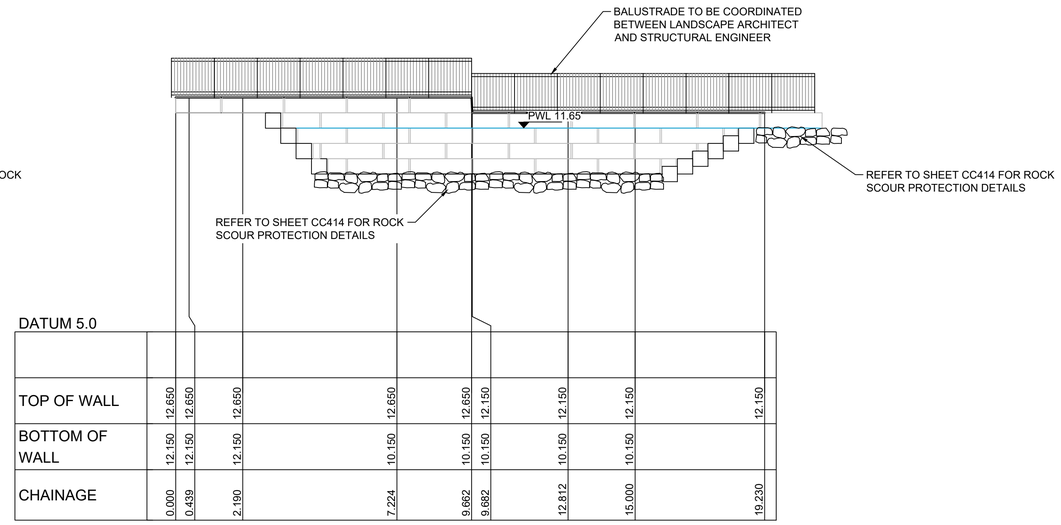
HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

OSD OUTLET RETAINING WALL					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296474.58	6269793.66	247°44'47.59"		
9.07	296466.18	6269790.22	247°44'47.59"		
14.22	296461.4	6269788.26		-50.01	10.3
19.37	296457.12	6269785.37	235°56'38.43"		
19.38	296457.11	6269785.36	235°56'38.43"		
24.08	296453.08	6269782.64		14.99	9.4
28.78	296448.22	6269782.8	271°52'10.09"		
35.74	296441.27	6269783.03	271°52'10.09"		



LONGITUDINAL SECTION OSD OUTLET EAST RETAINING WALL

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100



LONGITUDINAL SECTION OSD OUTLET WEST RETAINING WALL

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

OSD OUTLET EAST RETAINING WALL					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296454.93	6269806.45	149°18'09.76"		
6.42	296458.21	6269800.94	149°18'09.76"		
9.21	296459.67	6269798.47		10	5.59
12.01	296459.61	6269795.6	181°19'16.52"		
17.04	296459.49	6269790.57	181°19'16.52"		
17.91	296459.47	6269789.67		-3	1.75
18.79	296459.95	6269788.9	147°52'45.64"		
19.23	296460.18	6269788.53	147°52'45.64"		

OSD OUTLET WEST RETAINING WALL					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296454.33	6269784.86	327°52'45.64"		
0.44	296454.1	6269785.23	327°52'45.64"		
1.31	296453.62	6269785.99		-3	1.75
2.19	296452.8	6269786.36	294°26'14.77"		
7.22	296448.21	6269788.45	294°26'14.77"		
10.02	296445.6	6269789.63		10	5.59
12.81	296444.02	6269792.03	326°27'21.53"		
19.23	296440.47	6269797.37	326°27'21.53"		

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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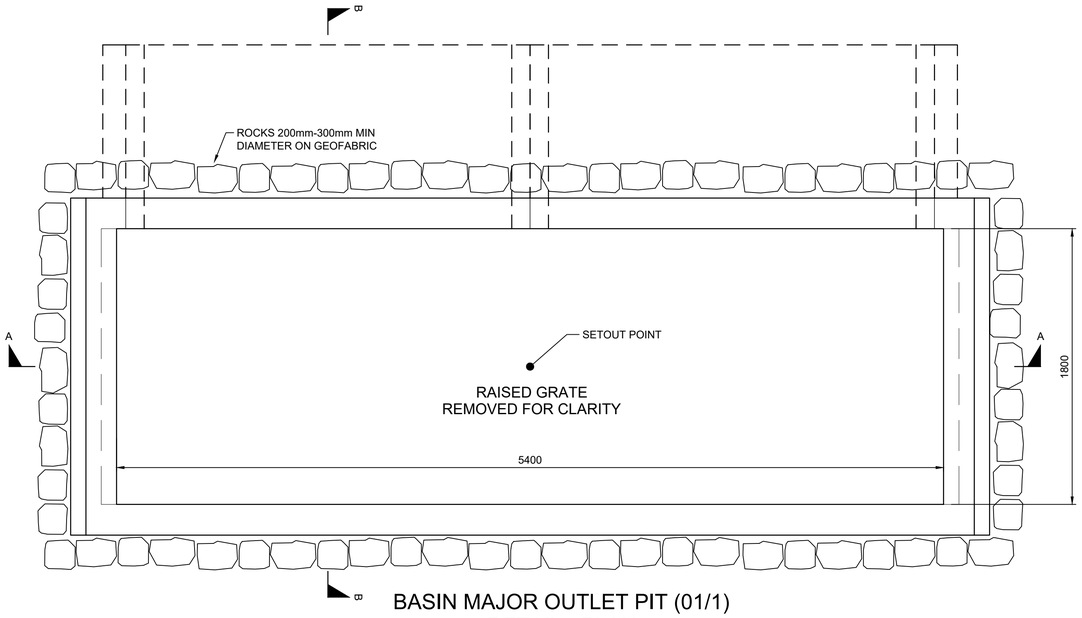
ISSUED FOR CONSTRUCTION APPROVAL

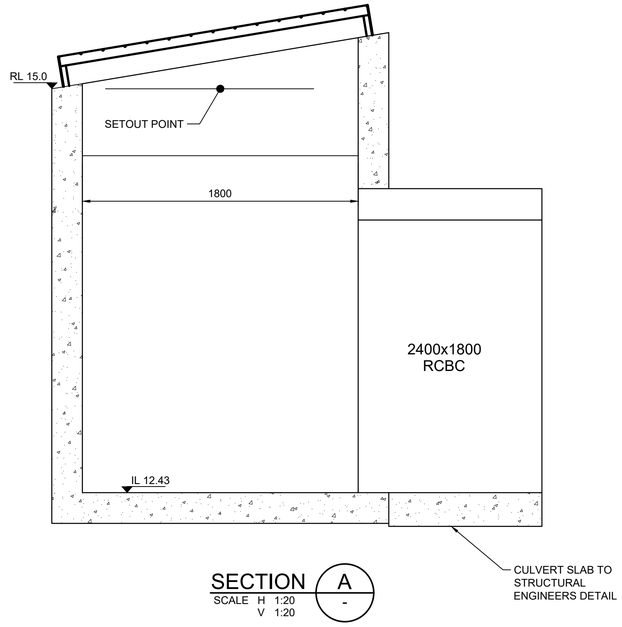
ELARA S7.11 WORKS
BASIN 3
MAIN OUTLET DETAILS AND SECTIONS

PLAN No: 11035005/CC416 A
FILE No: 11035005CC416
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:52:34 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC416.dwg

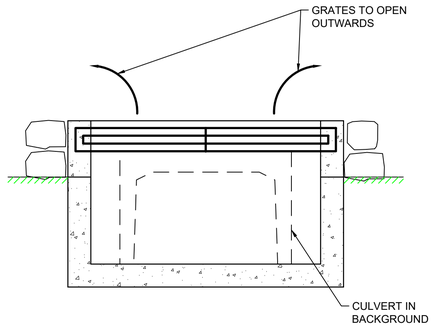


BASIN MAJOR OUTLET PIT (01/1)
DETAIL - PLAN
SCALE 1:20

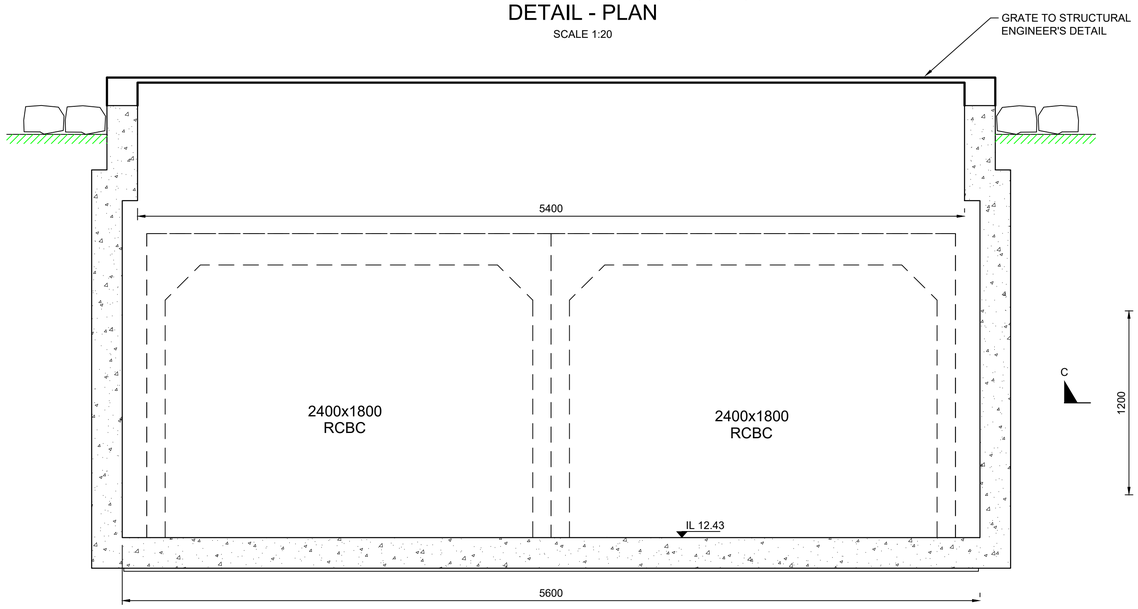


SECTION A
SCALE H 1:20
V 1:20

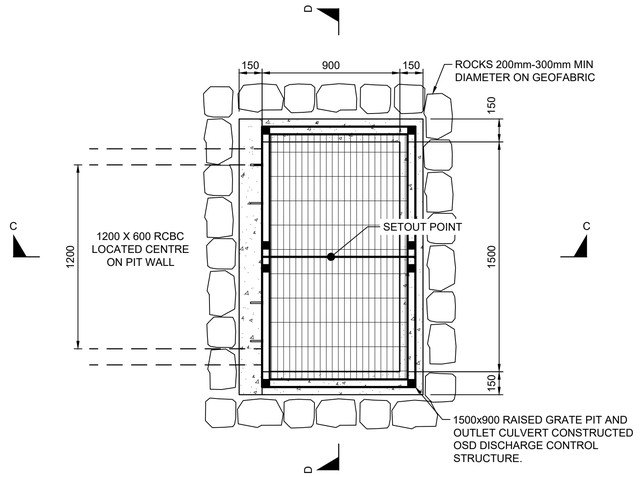
SUBJECT TO STRUCTURAL CERTIFICATION



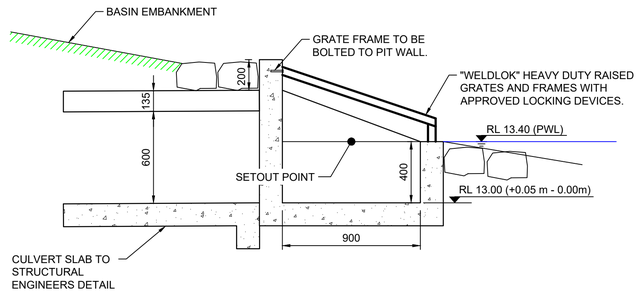
SECTION D
SCALE H 1:20
V 1:20



SECTION A
SCALE H 1:20
V 1:20



BASIN MINOR OUTLET PIT (02/1 & 04/1)
TYPICAL DETAIL - PLAN
SCALE 1:20



SECTION C
SCALE H 1:20
V 1:20

1:20 (AT A1)
400 200 0 400 800 1200 1600 2000
MILLIMETRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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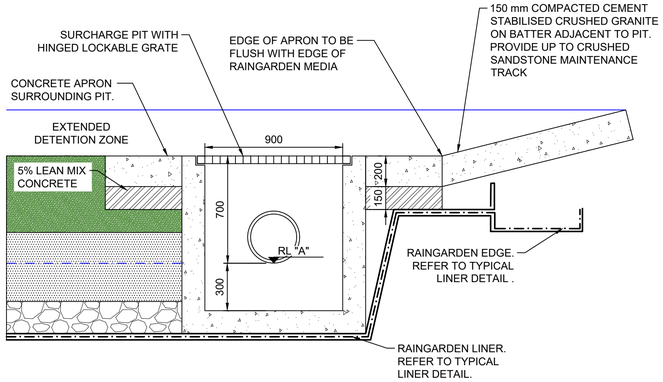
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S7.11 WORKS
BASIN 3
BASIN OUTLET PIT DETAILS

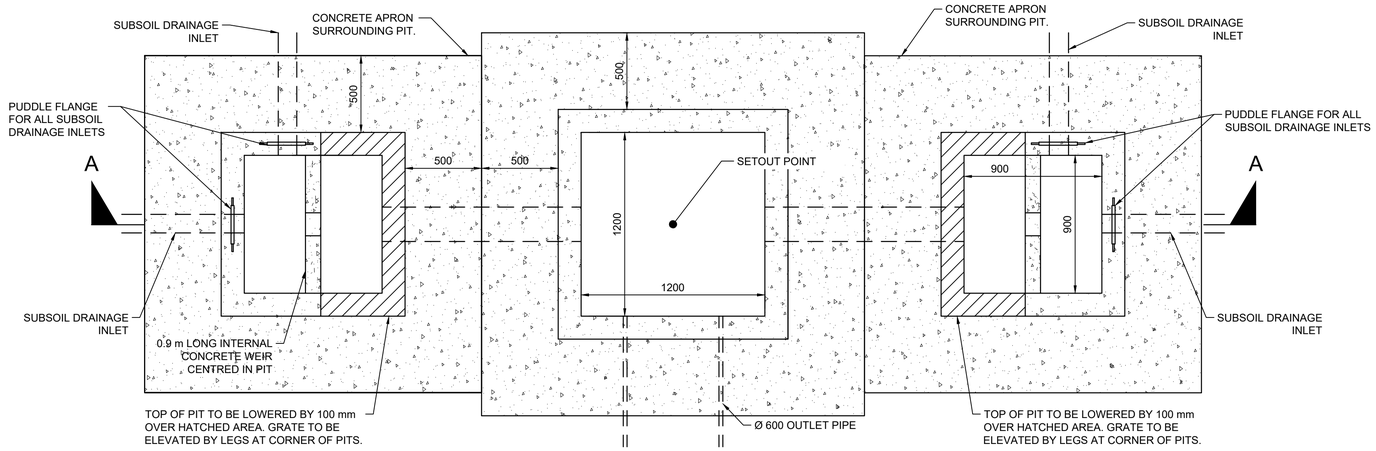
PLAN No: 11035005/CC417 A
FILE No: 11035005CC417
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:52:45 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC417.dwg



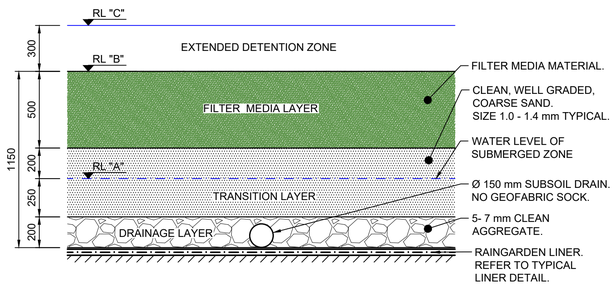
UPFLOW PIT TYPICAL SECTION

SCALE 1:20



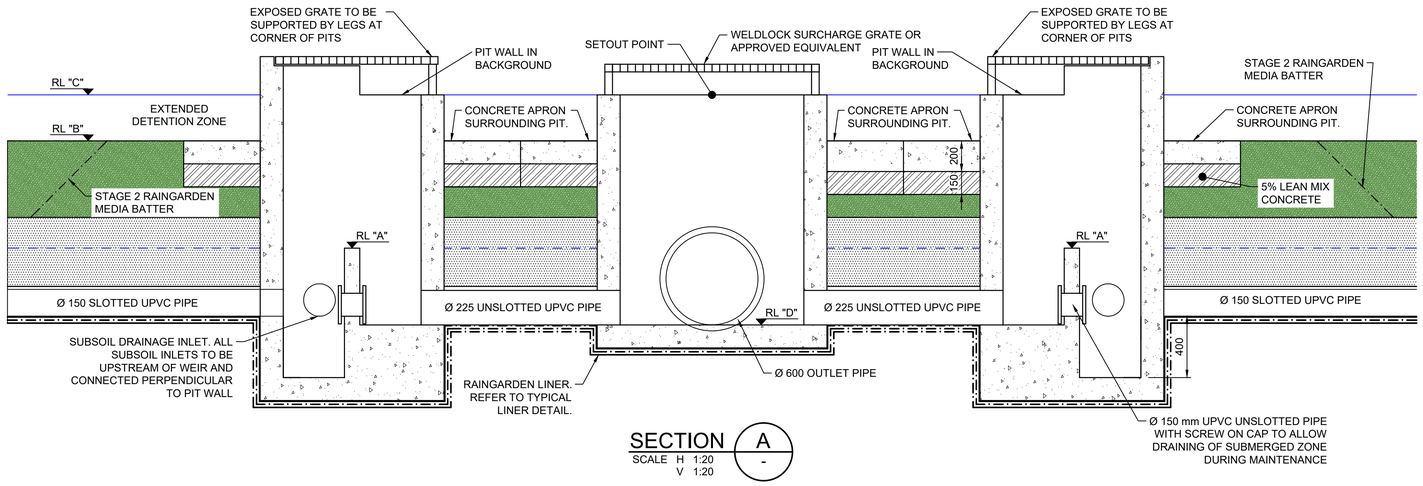
RAINGARDEN OUTLET PIT TYPICAL DETAIL - PLAN

SCALE 1:20



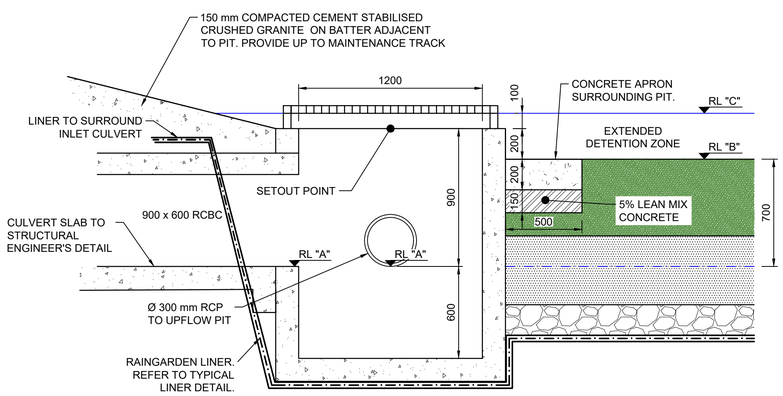
TYPICAL RAINGARDEN PROFILE DETAIL

SCALE 1:20



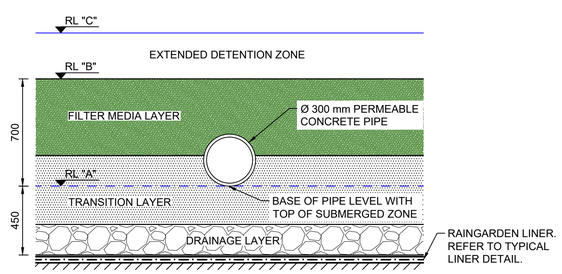
SECTION A

SCALE H 1:20
V 1:20



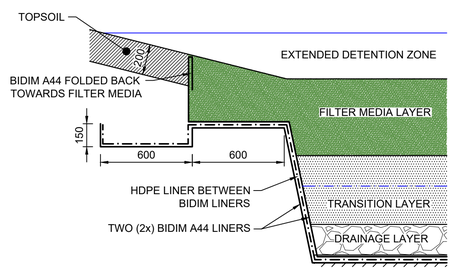
RAINGARDEN INLET PIT TYPICAL SECTION

SCALE 1:20



TYPICAL RAINGARDEN PROFILE WITH PERMEABLE PIPE DETAIL

SCALE 1:20



TYPICAL RAINGARDEN EDGE AND LINER DETAIL

SCALE 1:20

DETAILS	
RL "A"	12.20
RL "B"	12.90
RL "C"	13.20
RL "D'	11.75

1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
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ELARA S7.11 WORKS
BASIN 3
GENERAL RAINGARDEN DETAILS

PLAN No: 11035005/CC418 A
FILE No: 11035005CC418
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:53:01 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC418.dwg

MEDIA BED 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296361.49	6269751.4			
16.25	296355.86	6269768.24		32.4	32.49
32.49	296367.03	6269782.05	38°58'45.96"		
52.46	296379.59	6269797.57	38°58'45.96"		
58.1	296383.29	6269802.14		16.2	11.28
63.74	296389.06	6269803.28	78°51'55.31"		
66.34	296391.61	6269803.78	78°51'55.31"		
72.73	296401.77	6269805.78		6.2	12.79
79.13	296398.73	6269795.88	197°03'33.05"		
79.14	296398.73	6269795.86	197°03'33.05"		
82.96	296397.59	6269792.16		20	7.65
86.79	296395.16	6269789.15	218°58'24.28"		
110	296380.56	6269771.1	218°58'24.28"		
117.52	296375.39	6269764.71		-15	15.04
125.04	296377.99	6269756.92	161°31'17.68"		
129.23	296379.32	6269752.95	161°31'17.68"		
134.1	296380.92	6269748.16		15	9.74
138.97	296379.3	6269743.38	198°43'01.03"		
142.22	296378.25	6269740.29	198°43'01.03"		
146.06	296376.83	6269736.11		6.2	7.68
149.9	296372.41	6269736.08	269°41'32.63"		
151.21	296371.11	6269736.08	269°41'32.63"		
155.1	296366.62	6269736.05		6.2	7.77
158.98	296365.19	6269740.31	341°31'17.68"		

MEDIA BED 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296422.4	6269777.34			
14.52	296423.31	6269762.08		37.4	29.03
29.03	296413.26	6269750.55	221°04'02.54"		
44.79	296402.92	6269738.67	221°04'02.54"		
49.98	296399.38	6269734.61		16.2	10.39
55.18	296394.12	6269733.48	257°49'41.61"		
58.48	296390.89	6269732.78	257°49'41.61"		
61.75	296387.36	6269732.02		6.2	6.54
65.02	296384.96	6269734.71			
68.29	296382.55	6269737.41		6.2	6.54
71.56	296383.71	6269740.83			
71.56	296383.71	6269740.83			
75.46	296384.98	6269744.57		20	7.8
79.36	296387.58	6269747.55	41°04'02.54"		
98.5	296400.15	6269761.98	41°04'02.54"		
106.26	296405.52	6269768.14		-20	15.53
114.02	296405.03	6269776.31	356°35'16.94"		
128.73	296404.16	6269790.99	356°35'16.94"		
134.87	296403.59	6269800.43		6.2	12.29
141.02	296412.48	6269797.18	110°07'45.09"		
143.19	296414.52	6269796.43	110°07'45.09"		
149.69	296421.41	6269793.9		11.2	12.99
156.19	296421.85	6269786.58	176°35'16.94"		

MEDIA BED 3

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296492.31	6269837			
7.52	296492.49	6269828.79		-15	15.04
15.04	296499.52	6269824.52	121°16'29.94"		
19.23	296503.09	6269822.34	121°16'29.94"		
24.09	296507.41	6269819.72		15	9.74
28.96	296509.26	6269815.03	158°28'13.29"		
32.22	296510.45	6269812	158°28'13.29"		
36.06	296512.08	6269807.89		6.2	7.68
39.9	296508.72	6269805.01	229°26'44.89"		
41.21	296507.73	6269804.16	229°26'44.89"		
45.09	296504.31	6269801.24		6.2	7.77
48.98	296500.48	6269803.58	301°16'29.94"		
60.67	296490.48	6269809.65	301°16'29.94"		
76.92	296475.3	6269818.87		32.4	32.49
93.16	296474.91	6269836.62	358°43'58.22"		
113.13	296474.47	6269856.58	358°43'58.22"		
118.77	296474.34	6269862.46		16.2	11.28
124.41	296478.01	6269867.05	38°37'07.57"		
127.26	296479.79	6269869.28	38°37'07.57"		
133.53	296486.1	6269877.18		6.1	12.54
139.8	296490.15	6269867.92	156°23'02.74"		
139.93	296490.2	6269867.8	156°23'02.74"		
143.63	296491.7	6269864.36		19	7.41
147.33	296491.78	6269860.61	178°43'36.54"		

MEDIA BED 4

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296520.22	6269868.8			
14.52	296530.77	6269857.74		37.4	29.03
29.03	296530.55	6269842.44	180°49'14.80"		
44.79	296530.33	6269826.69	180°49'14.80"		
49.98	296530.25	6269821.31		16.2	10.39
55.18	296526.97	6269817.04	217°34'53.87"		
58.48	296524.96	6269814.43	217°34'53.87"		
61.75	296522.75	6269811.57		6.2	6.54
65.02	296519.18	6269812.07			
68.29	296515.6	6269812.58		6.2	6.54
71.56	296514.28	6269815.94			
71.56	296514.28	6269815.94			
75.46	296512.83	6269819.61		20	7.8
79.36	296512.88	6269823.56	0°49'14.80"		
98.5	296513.16	6269842.69	0°49'14.80"		
106.26	296513.27	6269850.87		-20	15.53
114.02	296507.63	6269856.79	316°20'29.20"		
128.73	296497.47	6269867.43	316°20'29.20"		
134.87	296490.94	6269874.27		6.2	12.29
141.02	296499.83	6269877.53	69°52'57.34"		
143.19	296501.87	6269878.28	69°52'57.34"		
149.69	296508.76	6269880.8		11.2	12.99
156.19	296513.83	6269875.49	136°20'29.20"		

WESTERN PERIMIETER

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296387.88	6269715.19	24°11'31.38"		
0.06	296387.91	6269715.25	24°11'31.38"		
9.07	296393.1	6269726.8		-9.95	18
18.07	296380.65	6269729.11	280°30'47.18"		
29.88	296369.03	6269731.26	280°30'47.18"		
35.85	296362.54	6269732.47		11.2	11.93
41.81	296360.45	6269738.73	341°31'17.68"		
53.5	296356.75	6269749.81	341°31'17.68"		
72.25	296350.25	6269769.26		37.4	37.51
91.01	296363.14	6269785.19	38°58'45.96"		
110.97	296375.7	6269800.72	38°58'45.96"		
118.35	296380.54	6269806.7		21.2	14.76
125.73	296388.09	6269808.18	78°51'55.31"		
128.5	296390.8	6269808.72	78°51'55.31"		
131.55	296393.88	6269809.32		11.2	6.11
134.61	296396.82	6269808.24	110°07'45.09"		
155.3	296416.24	6269801.12	110°07'45.09"		
164.69	296426.21	6269797.47		16.2	18.79
174.09	296426.84	6269786.88	176°35'16.94"		
183.34	296427.39	6269777.64	176°35'16.94"		
199.8	296428.42	6269760.33		42.4	32.92
216.26	296417.03	6269747.26	221°04'02.54"		
232.01	296406.69	6269735.38	221°04'02.54"		

EASTERN PERIMIETER

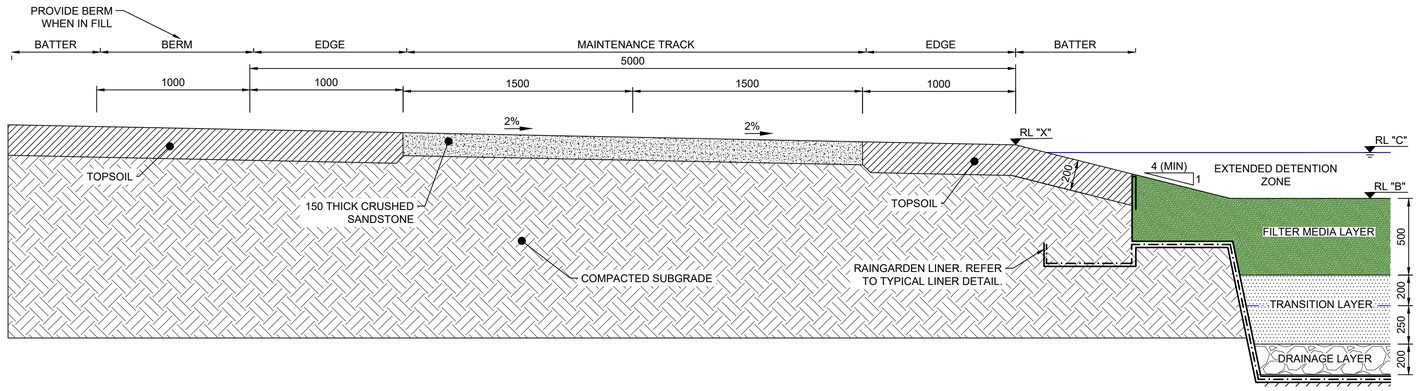
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296474.59	6269793.65	67°44'47.69"		
6.08	296480.22	6269795.95			
14.2	296492.12	6269800.82		-8	16.22
22.31	296482.5	6269809.35	311°32'45.33"		
37.71	296470.27	6269820.18		37.4	30.8
53.11	296469.91	6269836.51	358°43'58.22"		
73.08	296469.47	6269856.47	358°43'58.22"		
80.46	296469.3	6269864.16		21.2	14.76
87.84	296474.1	6269870.17	38°37'07.57"		
89.54	296475.16	6269871.5	38°37'07.57"		
93.63	296477.78	6269874.78		15	8.18
97.72	296481.72	6269876.22	69°52'57.34"		
117.35	296500.15	6269882.97	69°52'57.34"		
126.74	296510.12	6269886.62		16.2	18.79
136.14	296517.44	6269878.95	136°20'29.20"		
145.39	296523.83	6269872.25	136°20'29.20"		
161.85	296535.8	6269859.71		42.4	32.92
178.31	296535.55	6269842.37	180°49'14.80"		
194.06	296535.33	6269826.62	180°49'14.80"		
200.86	296535.23	6269819.58		21.2	13.6
207.66	296530.93	6269813.99	217°34'53.87"		
210.96	296528.92	6269811.38	217°34'53.87"		
213.18	296527.55	6269809.6		11.2	4.43
215.39	296525.6	6269808.49	240°15'58.86"		
234.25	296509.23	6269799.14	240°15'58.86"		
235.95	296507.73	6269798.28		11.2	3.42
237.66	296506.05	6269797.92	257°44'56.51"		
250.63	296493.38	6269795.17	257°44'56.51"		

ACCESS 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296382.36	6269668.62	355°15'37.00"		
36.98	296379.13	6269707.56		92.5	73.95
73.95	296404.8	6269737.03	41°04'03.63"		

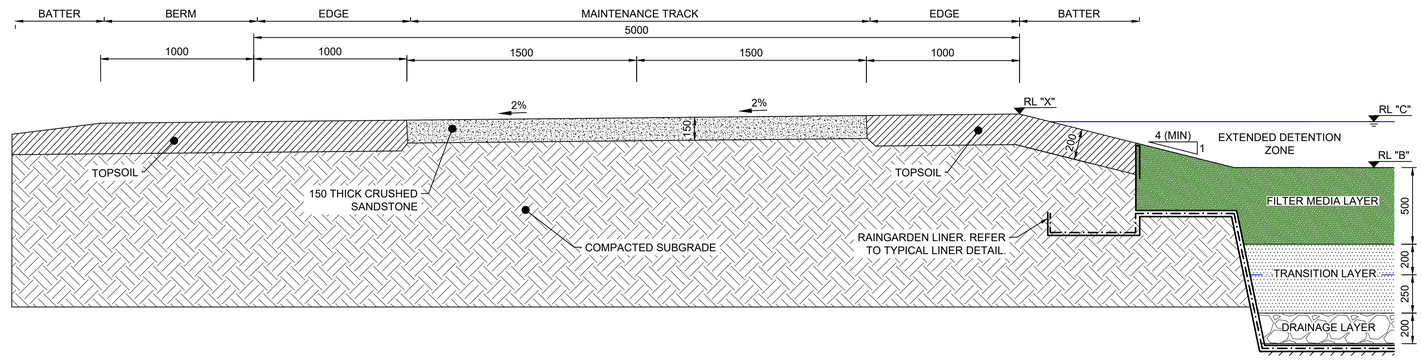
ACCESS 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296427.19	6269780.97	91°52'10.09"		
20.96	296448.14	6269780.29	91°52'10.09"		
26.45	296453.81	6269780.1		-17.5	10.97
31.93	296458.51	6269783.28			
31.95	296458.52	6269783.29			
36.84	296462.59	6269786.04		47.5	9.78
41.73	296467.13	6269787.9	67°44'47.59"		
56.56	296480.86	6269793.51	67°44'47.59"		
61.44	296485.38	6269795.36		102.5	9.76
66.32	296490.06	6269796.77	73°12'15.16"		
69.04	296492.66	6269797.56	73°12'15.16"		



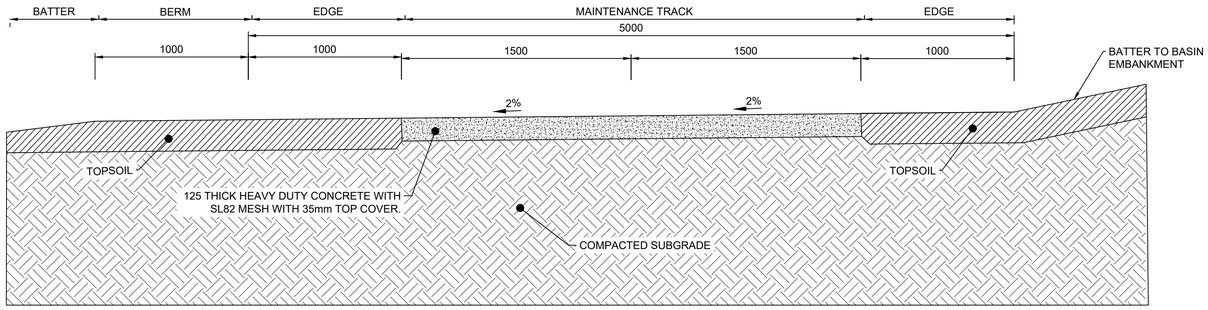
TYPICAL MAINTENANCE ACCESS TRACK

SCALE 1:20



TYPICAL MAINTENANCE ACCESS TRACK - REVERSE CROSSFALL

SCALE 1:20



DETAILS	
RL "B"	12.90
RL "C"	13.20
RL "X"	13.30

TYPICAL MAINTENANCE ACCESS TRACK - ENTRY RAMP

SCALE 1:20

1:20 (AT A1)

400 200 0 400 800 1200 1600 2000

MILLIMETRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:

DATUM:

ORIGIN:

CLIENT: Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

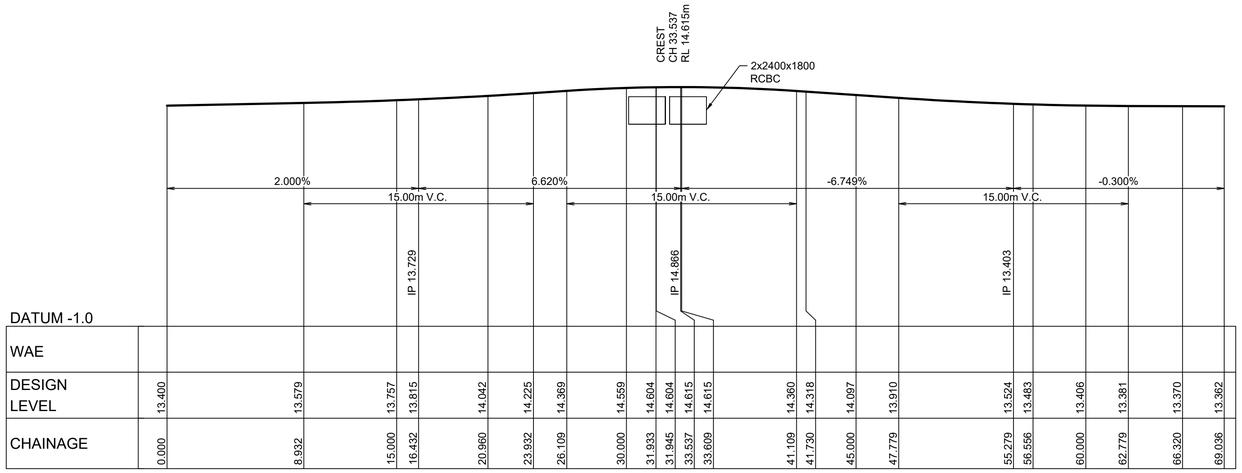
ELARA S7.11 WORKS
BASIN 3
RAINGARDEN MAINTENANCE TRACK DETAILS AND SETOUT TABLES

PLAN No: 11035005/CC419 A

FILE No: 11035005CC419

SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:53:13 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC419.dwg



LONGITUDINAL SECTION ACCESS 2

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

LONGITUDINAL SECTION ACCESS 1

HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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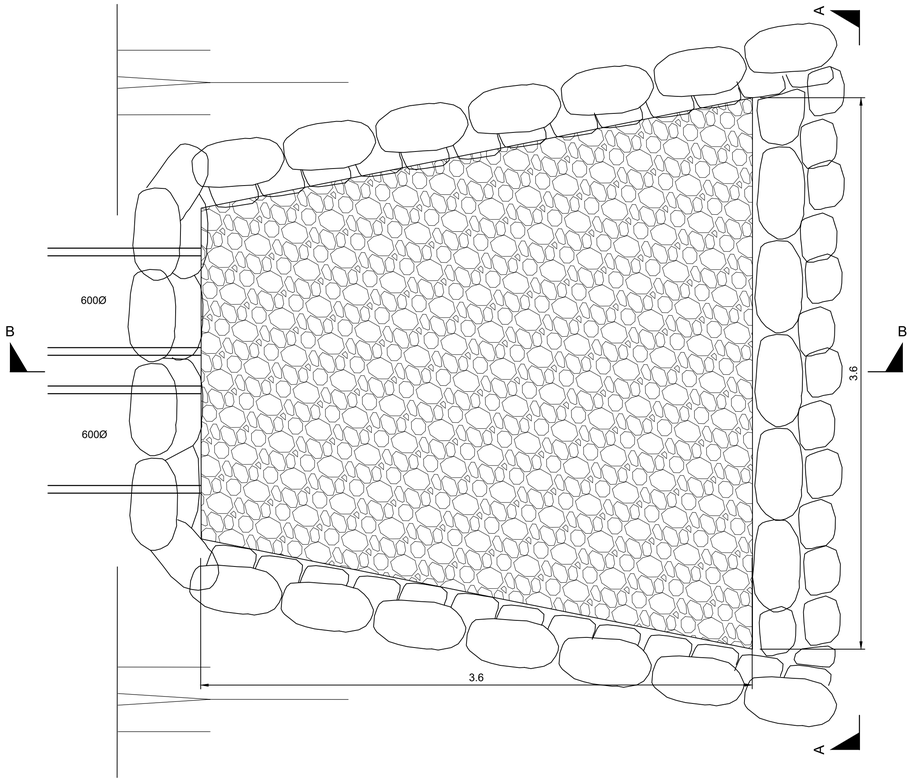
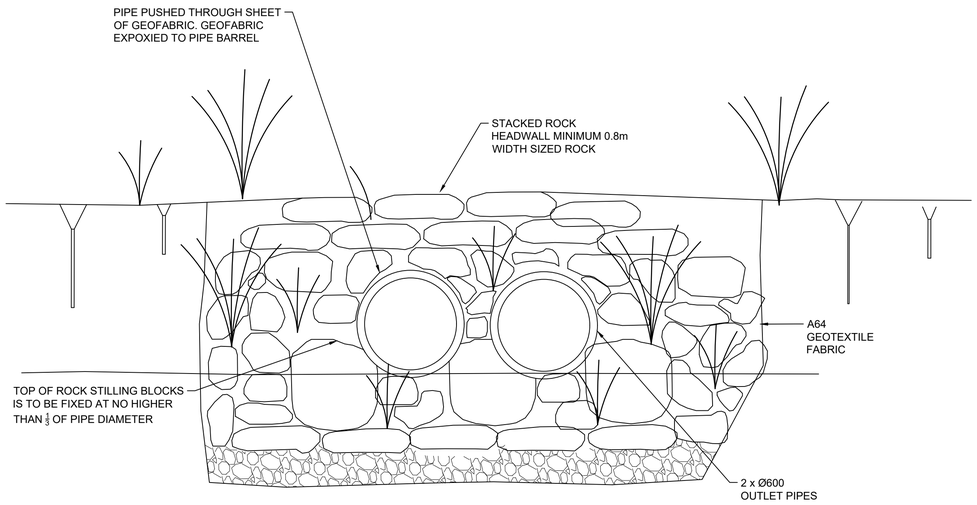
ELARA S7.11 WORKS
BASIN 3
RAINGARDEN MAINTENANCE TRACK
LONGITUDINAL SECTIONS

PLAN No: 11035005/CC420 A
FILE No: 11035005CC420
SHEET SIZE: A1 ORIGINAL

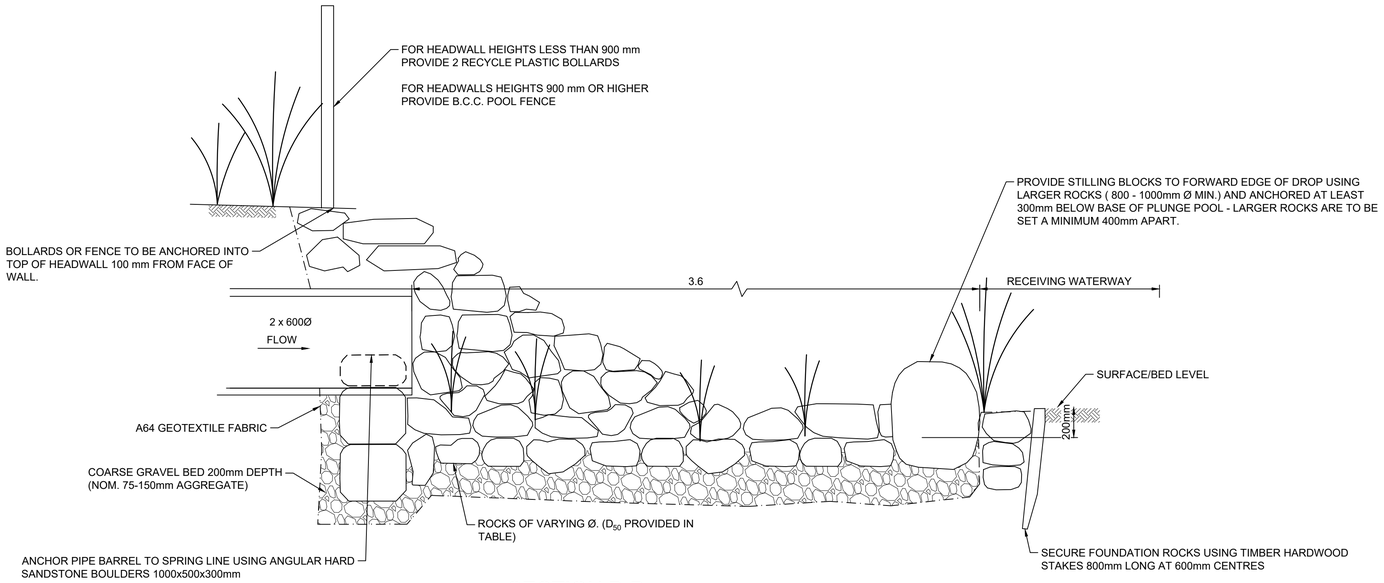
Plotted: 15 November , 2018 4:53:20 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC420.dwg



PLAN VIEW
N.T.S



SECTION A-A
N.T.S



SECTION B-B
N.T.S

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S7.11 WORKS
BASIN 3
RAINGARDEN HEADWALL DETAILS

PLAN No: 11035005/CC421 A
FILE No: 11035005CC421
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:53:31 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC421.dwg

RAINGARDEN STAGING NOTES

THE CONSTRUCTION OF THE RAINGARDENS IS TO BE STAGED IN ACCORDANCE WITH THE BLACKTOWN CITY COUNCIL STANDARD WSUD DRAWINGS A(BS)175M SHEETS 1 TO 25.

STAGE 1

TEMPORARY SEDIMENT BASIN IS ACHIEVED IN THE PERMANENT WATER AREA IN THE UPSTREAM BASIN. NO FURTHER TEMPORARY SEDIMENT BASIN WORKS ARE REQUIRED WITHIN THE RAINGARDEN.

STAGE 2

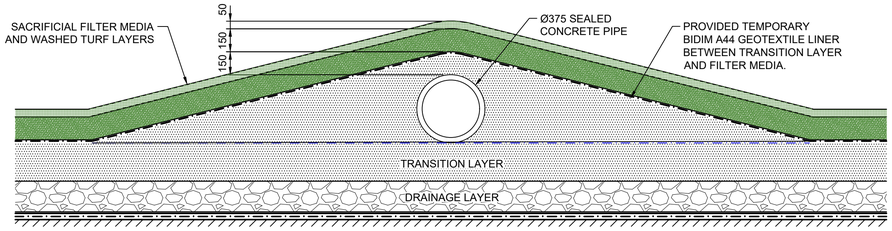
RAIN GARDEN IS TO BE PARTIALLY CONSTRUCTED IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS SHEET. STAGE 2 WORKS ARE TO COMMENCE UPON COMPLETION OF BULK EARTHWORKS AND SEALING OF ROADS WITHIN UPSTREAM CATCHMENTS. STAGE 2 WORKS TO GENERALLY INCLUDE THE FOLLOWING:

- REMOVAL OF TEMPORARY HEADWALLS, SCOUR PROTECTION AND TAILOUT TRAINS.
- INSTALLATION OF RAINGARDEN LINER.
- INSTALLATION OF RAINGARDEN DRAINAGE LAYER INCLUDING SUBSOIL DRAINAGE.
- INSTALLATION OF INTERIM FLUSHING POINTS.
- INSTALLATION OF FIRST 250 mm OF TRANSITION LAYER (UP TO SATURATED ZONE)
- INSTALLATION OF UPFLOW PITS, CONNECTING Ø375 CONCRETE PIPES AND TEMPORARY SOIL BARRIERS.
- INSTALLATION OF SIDE OUTLET PITS.
- LOCALISED MOUNDING OVER Ø375 CONCRETE PIPES.
- INSTALLATION OF INTERIM GEOTEXTILE. FILTER MEDIA AND TURF LAYERS.
- INSTALLATION OF GATE.

STAGE 3

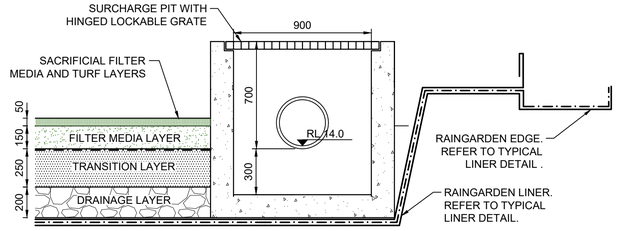
OPERATIONAL ESTABLISHMENT ONCE 90% OF THE DEVELOPMENT HAS OCCURRED. - REMOVAL OF TURF, SACRIFICIAL MEDIA LAYER AND TEMPORARY GEOTEXTILE. INSTALLATION OF,

- REMAINING UPFLOW PITS.
- PERMEABLE CONCRETE PIPE.
- UPPER 200mm OF TRANSITION LAYER.
- FILTER MEDIA LAYER.
- PLANTING.
- REMOVAL OF ALL SEDIMENT FROM PIPES, INLETS AND OUTLETS.



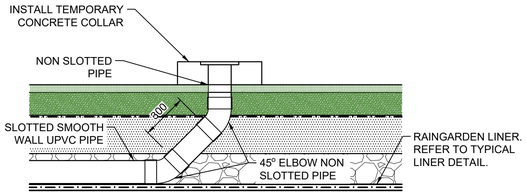
LOCAL MOUNDING OVER PIPE DETAIL

SCALE 1:20



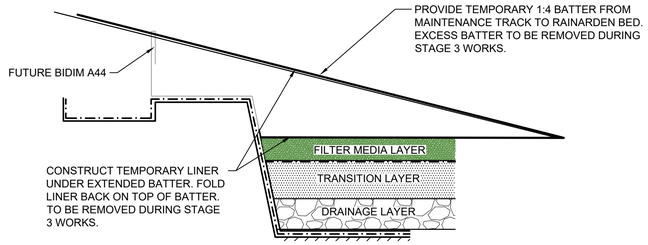
INTERIM UPFLOW PIT TYPICAL DETAIL

SCALE 1:20



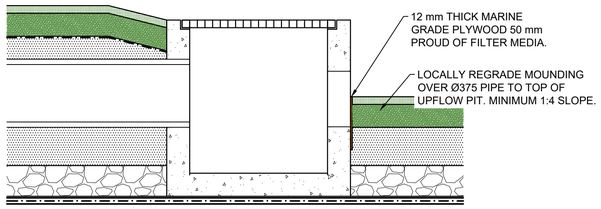
INTERIM FLUSHING POINT TYPICAL DETAIL

SCALE 1:20



INTERIM RAINGARDEN EDGE AND LINER DETAIL

SCALE 1:20



INTERIM UPFLOW PIT SOIL BARRIER DETAIL

SCALE 1:20

1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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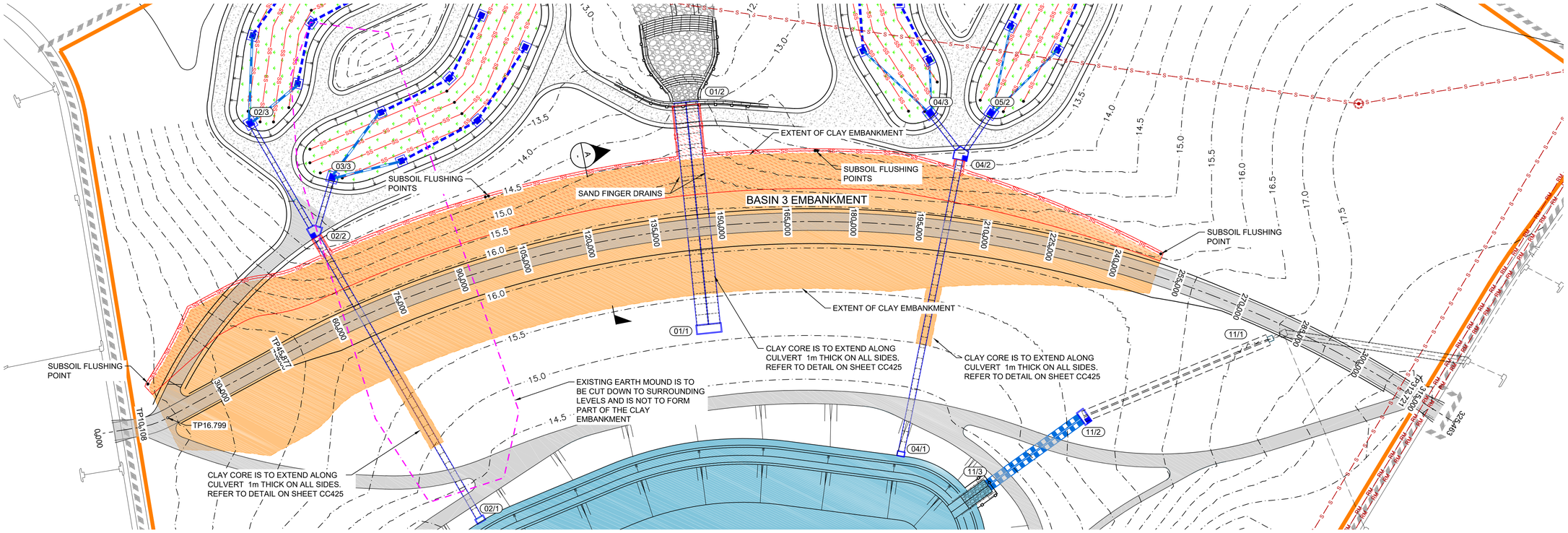
ELARA S7.11 WORKS
BASIN 3
RAINGARDEN CONSTRUCTION STAGING DETAILS

PLAN No: 11035005/CC422 A

FILE No: 11035005CC422

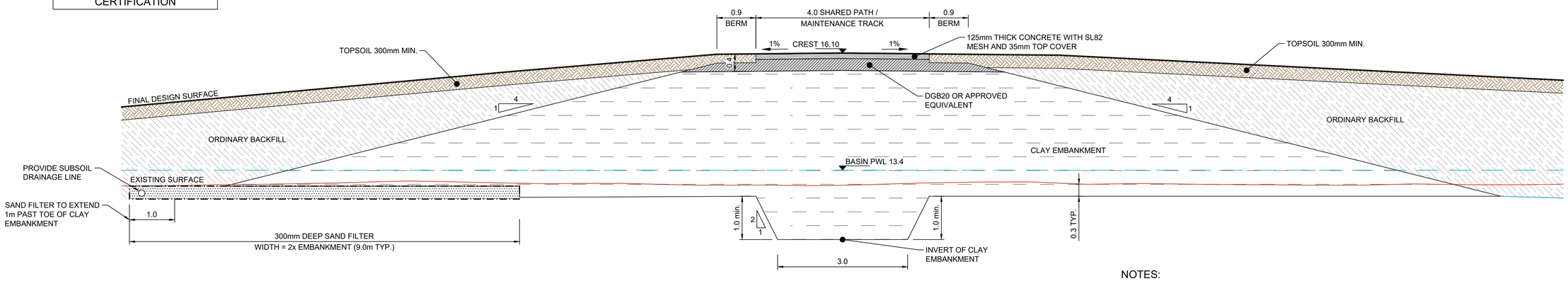
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:53:43 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC422.dwg



EMBANKMENT WALL DETAILS AMENDED
B

SUBJECT TO GEOTECHNICAL CERTIFICATION



TYPICAL SECTION THROUGH EMBANKMENT WALL

SECTION A
SCALE H 1:50
V 1:50

NOTES:
1) REFER TO GEOTECHNICAL REPORT BY GEOTECH TESTING (REF 8537/7-AA-R1 DATED 10 AUGUST 2018) FOR EMBANKMENT SPECIFICATION.
2) EXTENT OF CLAY EMBANKMENT IS TO BE SURVEYED PRIOR TO PLACEMENT OF ORDINARY FILL TO INFORM TREE PLANTING LOCATIONS.

1:50 (AT A1) 1:100 (AT A3) — METRES
1:500 (AT A1) 1:1000 (AT A3) — METRES

B	EMBANKMENT DETAILS AMENDED	PAS	PAS	AM	MS	22/11/18
A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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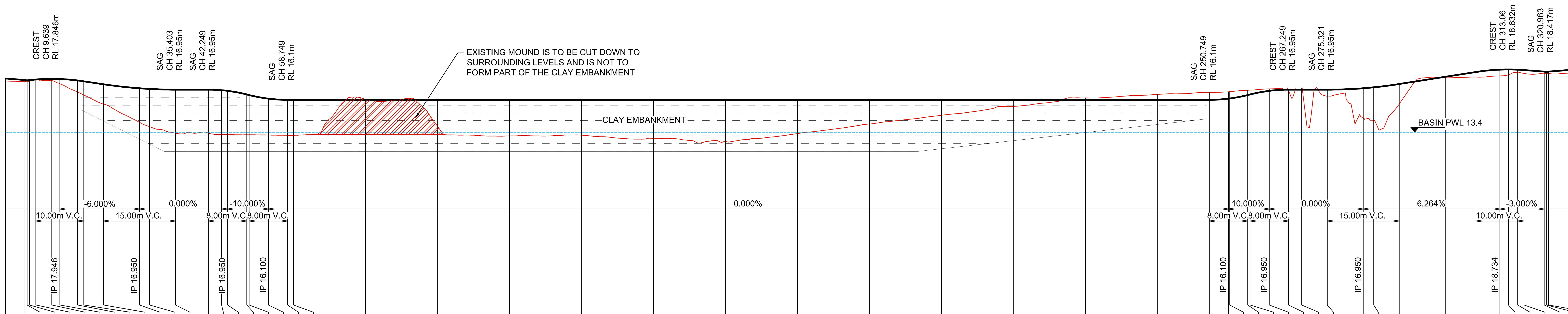
ELARA S7.11 WORKS
BASIN 3
EMBANKMENT DETAIL PLAN

PLAN No: 11035005/CC423 B
FILE No: 11035005CC423
SHEET SIZE: A1 ORIGINAL

Plotted: 22 November , 2018 10:37:57 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC423.dwg

SUBJECT TO GEOTECHNICAL CERTIFICATION



DATUM -2.0

CHAINAGE	DESIGN LINE GRADING	CLAY EMBANKMENT INVERT	EXISTING SURFACE
0.000	17.877		17.664
4.050	17.755		17.616
4.500	17.715		17.624
4.950	17.755		17.639
6.306	17.796		17.751
9.639	17.846		17.695
11.306	17.833		17.443
15.000	17.716		16.753
16.306	17.646	15.139	16.503
20.403	17.400	14.319	15.745
27.903	17.063	12.819	14.223
30.000	17.008	12.400	13.864
35.403	16.950	11.800	13.319
42.249	16.950	11.800	13.319
45.000	16.903	11.800	13.216
46.249	16.850	11.800	13.209
50.249	16.550	11.800	13.186
50.749	16.500	11.800	13.187
54.749	16.200	11.800	13.168
58.749	16.100	11.800	13.146
60.000	16.100	11.800	13.135
75.000	16.100	11.800	16.124
90.000	16.100	11.800	13.886
105.000	16.100	11.800	13.095
120.000	16.100	11.800	13.152
135.000	16.100	11.800	12.896
150.000	16.100	11.800	12.641
165.000	16.100	11.800	13.291
180.000	16.100	11.800	14.088
195.000	16.100	12.025	14.817
210.000	16.100	12.700	15.557
225.000	16.100	13.375	16.259
240.000	16.100	14.050	16.555
250.749	16.100		16.721
254.749	16.200		16.773
255.000	16.213		16.781
258.749	16.500		16.901
259.249	16.550		16.911
263.249	16.850		17.016
267.249	16.950		16.918
270.000	16.950		17.090
275.321	16.950		16.412
282.821	17.067		14.562
285.000	17.146		14.395
290.321	17.420		15.744
300.000	18.026		17.939
306.298	18.421		17.994
311.298	18.618		18.095
313.060	18.632		18.173
315.000	18.615		18.402
316.298	18.584		18.302
320.513	18.457		18.314
320.963	18.417		18.308
321.413	18.458		18.295
325.463	18.580		18.316

LONGITUDINAL SECTION BASIN 3 EMBANKMENT
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:200

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

H 1:500 (AT A1)
10 0 10 20 30 40 50
METRES

CLIENT: Stockland

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	AMENDMENT	DES	DRN	CKD	APR	DATE
A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18

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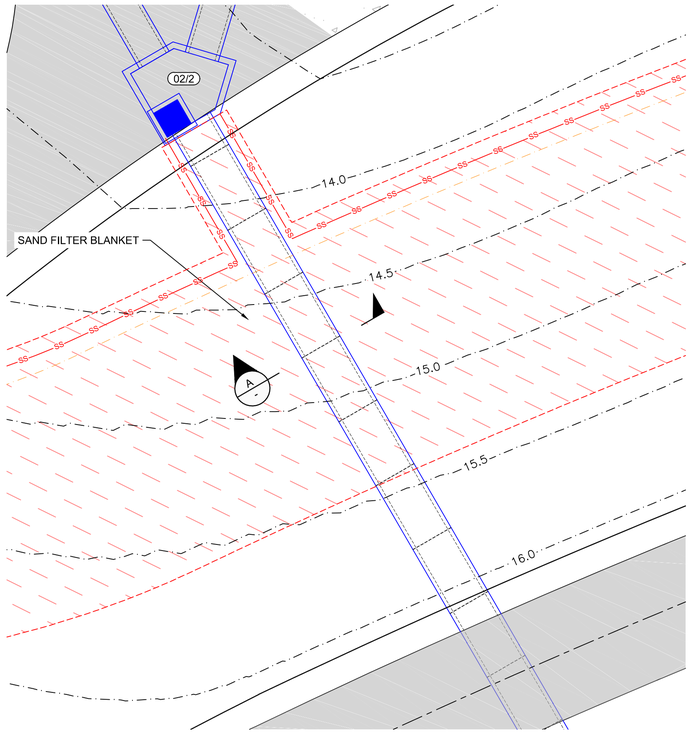
DATUM:
ORIGIN:

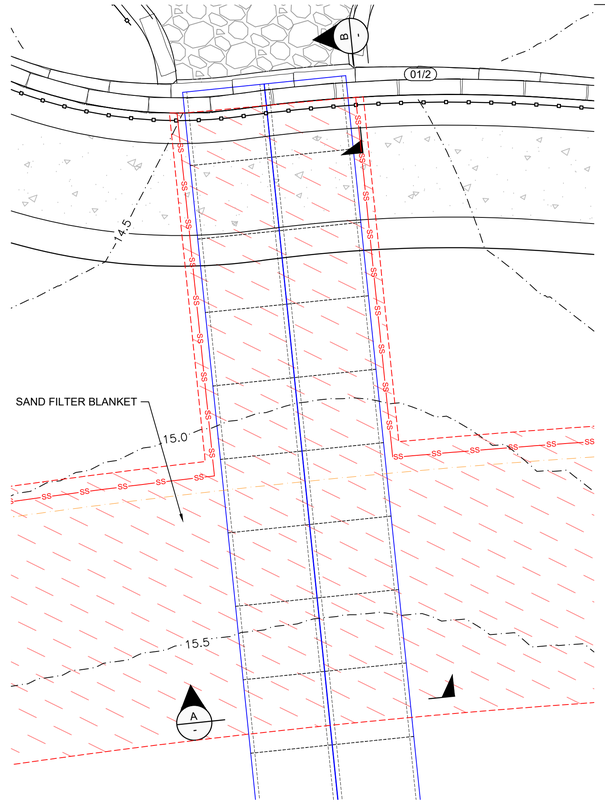
ELARA S7.11 WORKS
BASIN 3
EMBANKMENT LONG SECTION

PLAN No: 11035005/CC424 A
FILE No: 11035005CC424
SHEET SIZE: A1 ORIGINAL

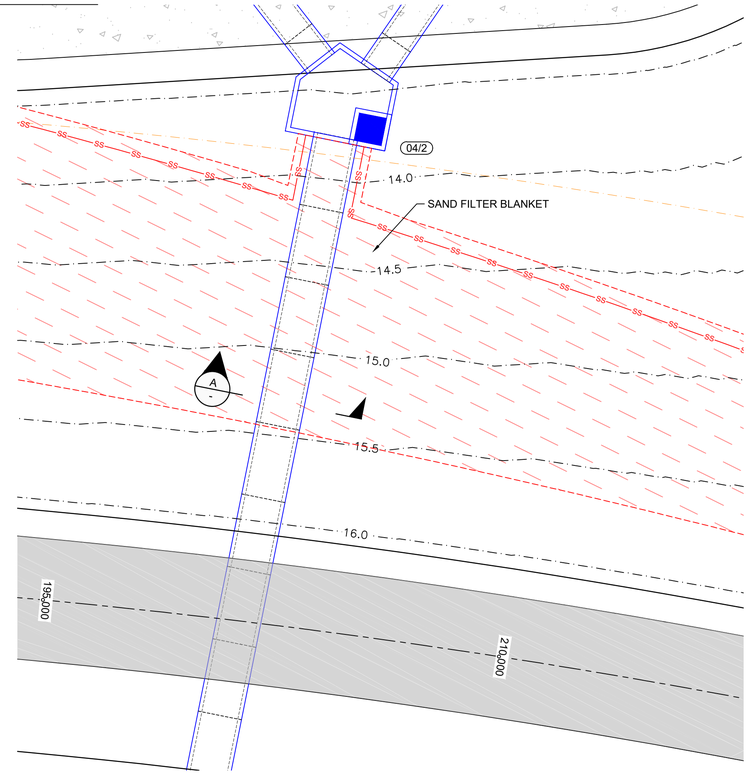
Plotted: 15 November , 2018 4:54:10 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC01_Basin 3\11035005CC424.dwg



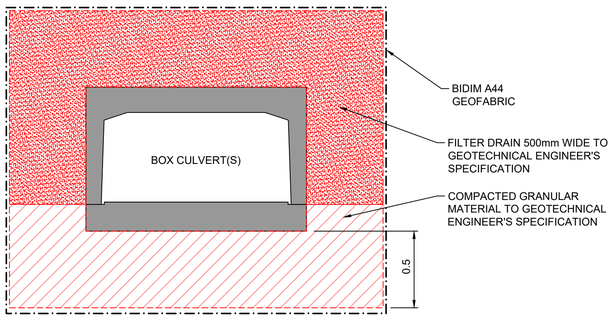
SAND FINGER DRAIN DETAIL
STORMWATER LINE 02
SCALE 1:100



SAND FINGER DRAIN DETAIL
STORMWATER LINE 01
SCALE 1:100

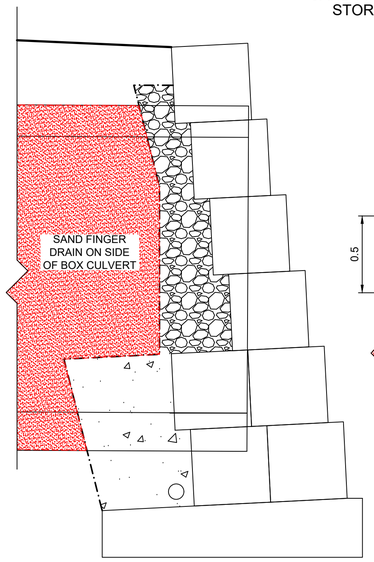


SAND FINGER DRAIN DETAIL
STORMWATER LINE 04
SCALE 1:100



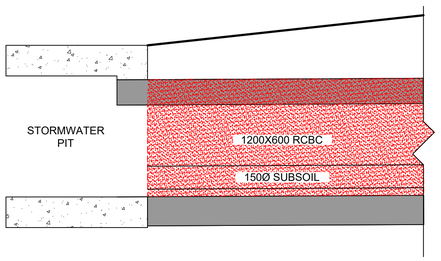
TYPICAL SAND FILTER DETAIL

SECTION A
SCALE H 1:20
V 1:20

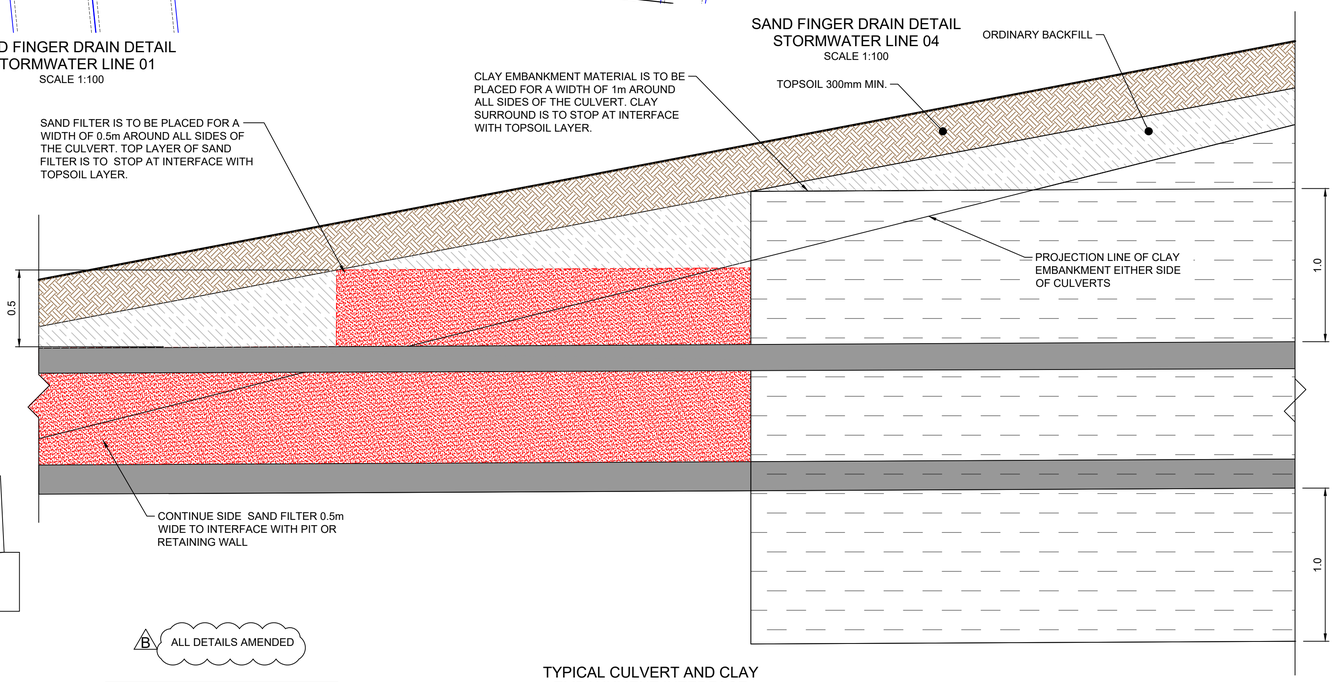


SAND FINGER DRAIN AND RETAINING
WALL INTERFACE

SECTION B
SCALE H 1:20
V 1:20



TYPICAL SAND FINGER DRAIN
SUBSOIL DRAINAGE
SCALE 1:20



TYPICAL CULVERT AND CLAY
EMBANKMENT INTERFACE
SCALE 1:20

B ALL DETAILS AMENDED

SUBJECT TO GEOTECHNICAL
CERTIFICATION

1:20 (AT A1) 400 200 0 400 800 1200 1600 2000 MILLIMETRES

1:100 (AT A1)
1:200 (AT A3) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

B	EMBANKMENT DETAILS AMENDED	PAS	PAS	AM	MS	22/11/18
A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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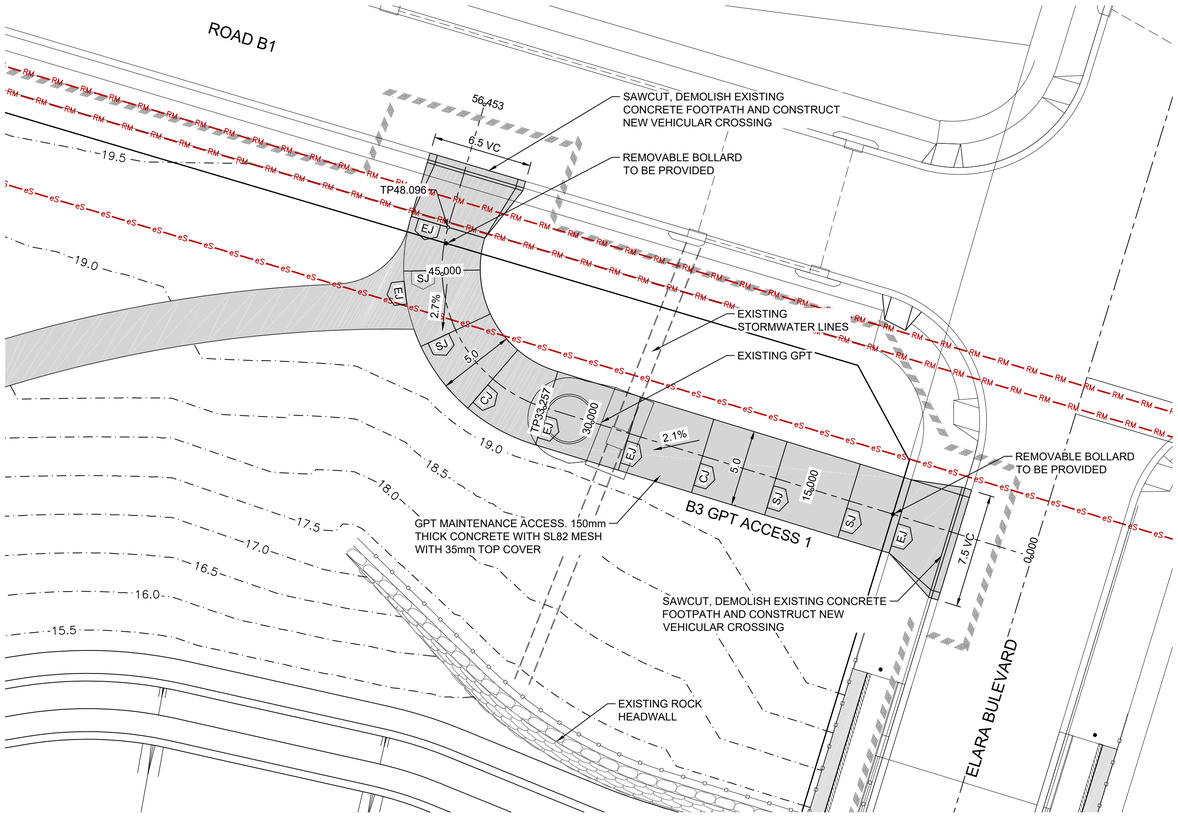
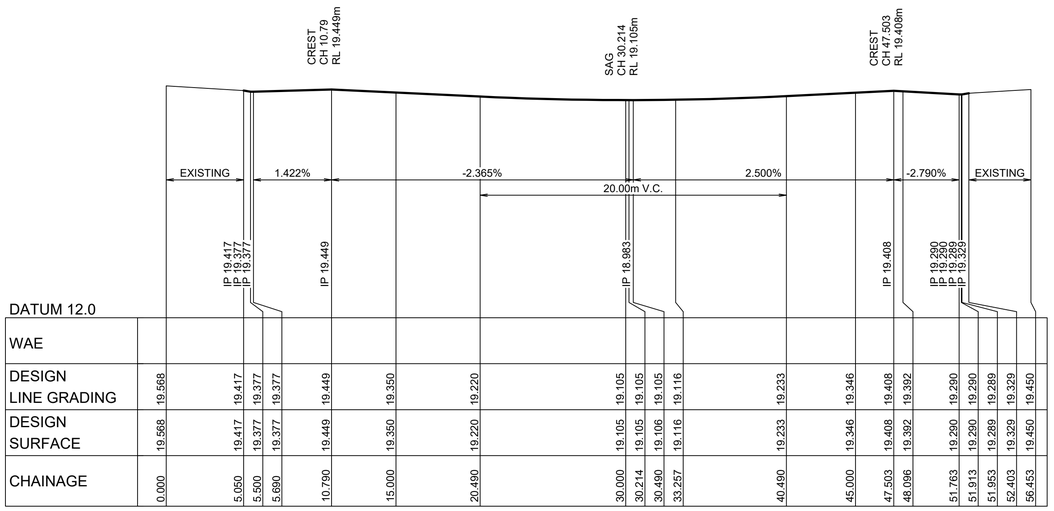
ELARA S7.11 WORKS
BASIN 3
EMBANKMENT DETAIL SHEET

PLAN No: 11035005/CC425 B
FILE No: 11035005CC425
SHEET SIZE: A1 ORIGINAL

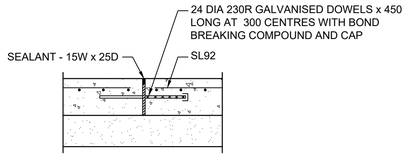
Plotted: 22 November , 2018 10:35:47 AM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC425.dwg



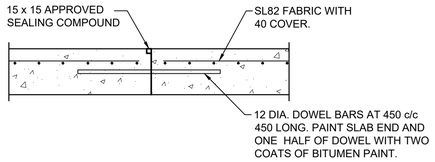
GPT ACCESS DETAIL PLAN
1:200



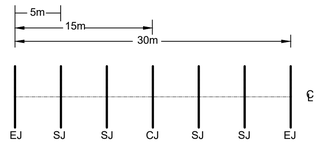
LONGITUDINAL SECTION B3 GPT ACCESS 1
HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:100



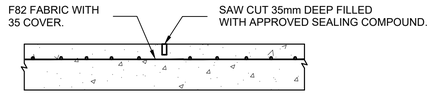
EXPANSION/CONSTRUCTION JOINT
(MAXIMUM 30m INTERVALS) EJ



CONTRACTION JOINT (CJ)
(MAXIMUM 15m INTERVALS) NOTE: MAY BE USED AS A CONSTRUCTION JOINT CJ



JOINT SPACING KEY



SAWN JOINT (SJ)
(MAXIMUM 5m INTERVALS) SJ

B3 GPT ACCESS 1					
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296694.38	6269369.71	350°45'44.60"		
33.26	296689.04	6269402.54	350°45'44.60"		
40.68	296687.53	6269411.83		9.5	14.84
48.1	296696.81	6269413.43	80°15'41.34"		
56.45	296705.04	6269414.84	80°15'41.34"		

1:100 (AT A1) 1:200 (AT A3) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES
1:200 (AT A1) 1:400 (AT A3) 4 2 0 4 8 12 16 20 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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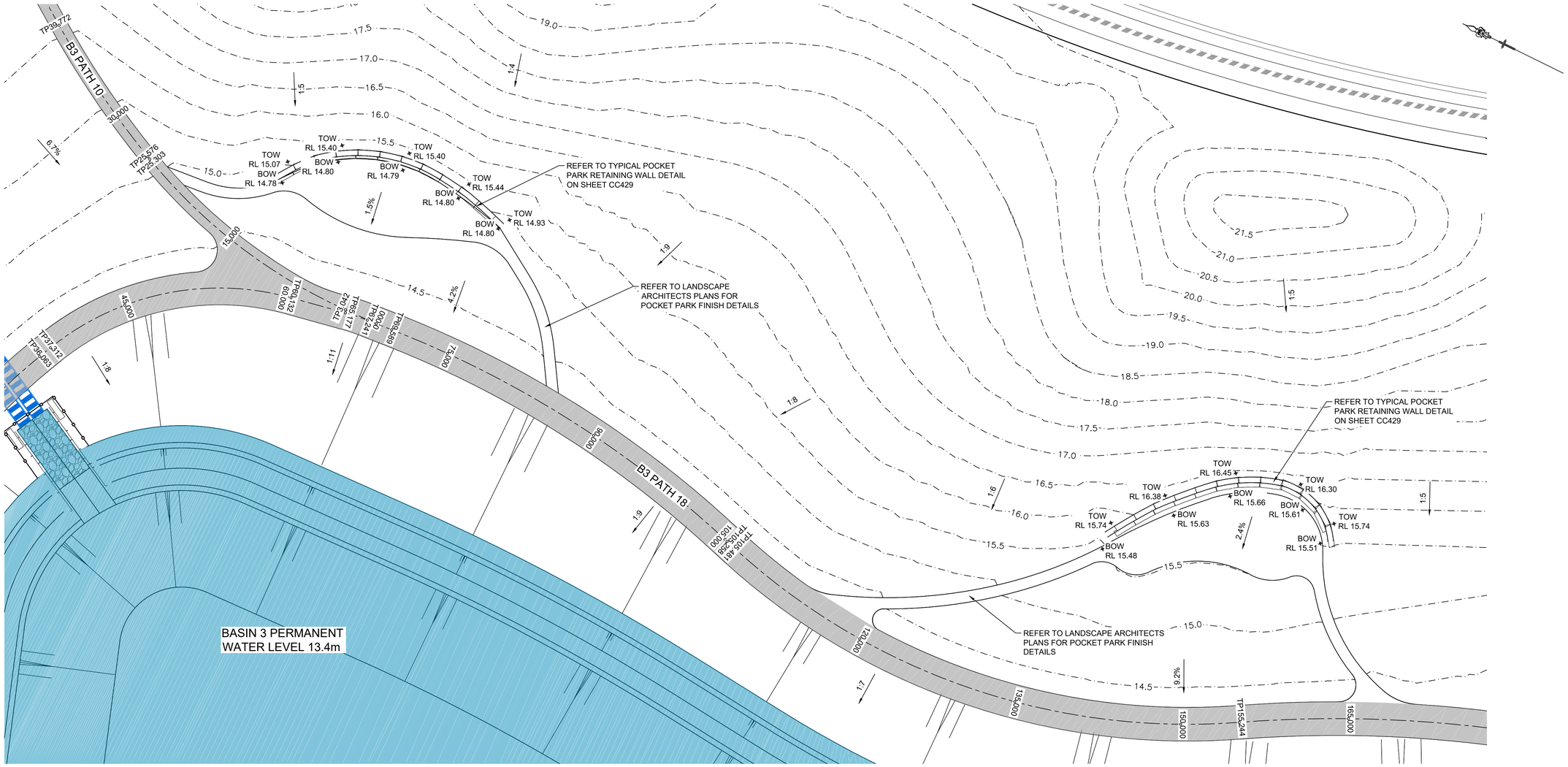
ISSUED FOR CONSTRUCTION APPROVAL

ELARA S7.11 WORKS
BASIN 3
GPT ACCESS PLAN

PLAN No: 11035005/CC426 A
FILE No: 11035005CC426
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:55:21 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC426.dwg



1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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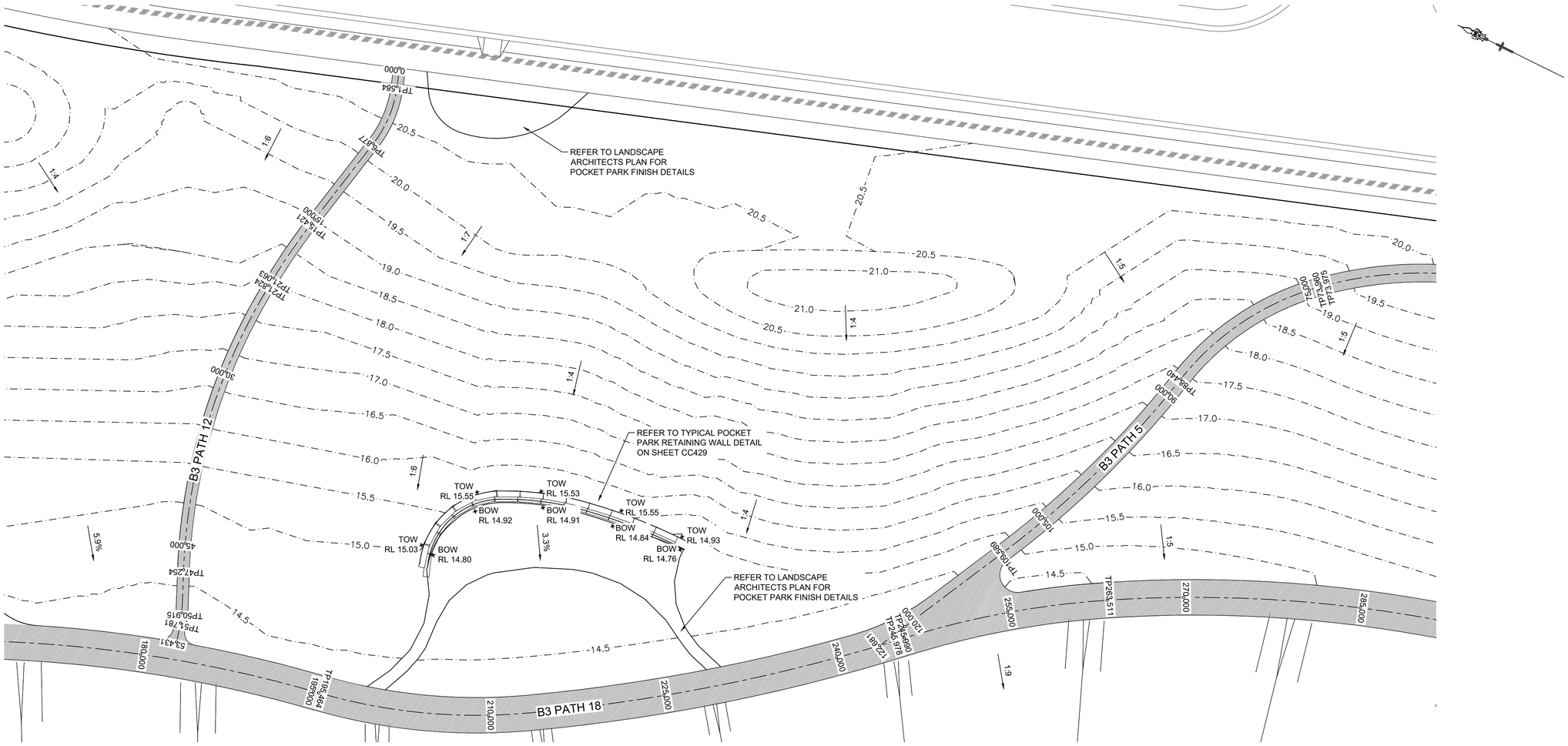
ELARA S7.11 WORKS
BASIN 3
POCKET PARK DETAIL PLAN
SHEET 1

PLAN No: 11035005/CC427 A

FILE No: 11035005CC427

SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:55:43 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC427.dwg



1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

CLIENT:

Stockland

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ELARA S7.11 WORKS
BASIN 3
POCKET PARK DETAIL PLAN
SHEET 2

PLAN No: 11035005/CC428 A

FILE No: 11035005CC428

SHEET SIZE: A1 ORIGINAL

AZIMUTH:

DATUM:

ORIGIN:

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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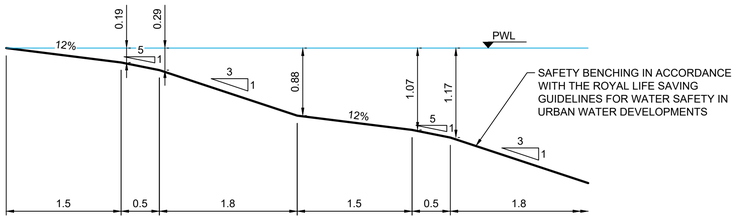
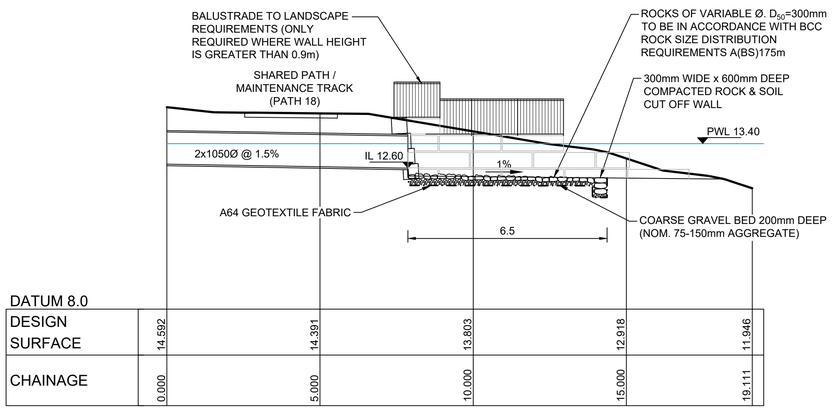
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

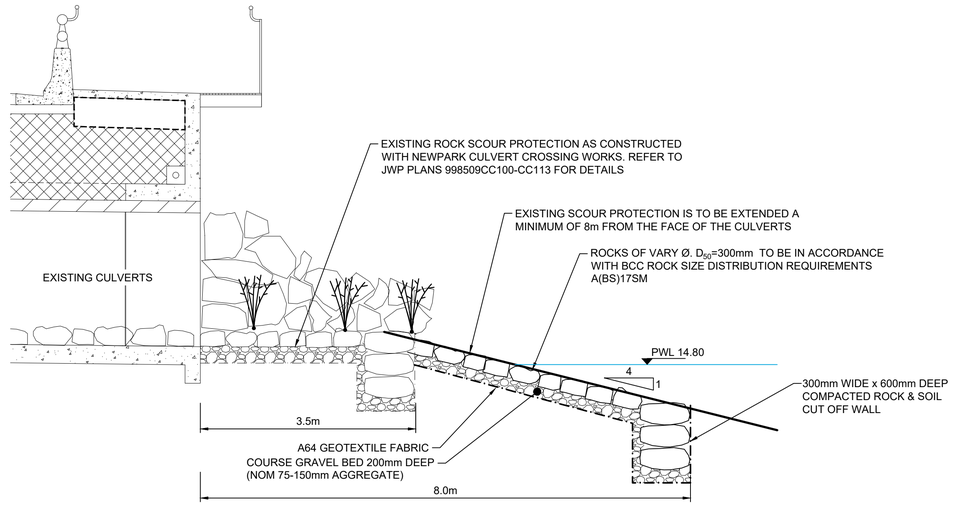
Plotted: 15 November , 2018 4:56:05 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC428.dwg



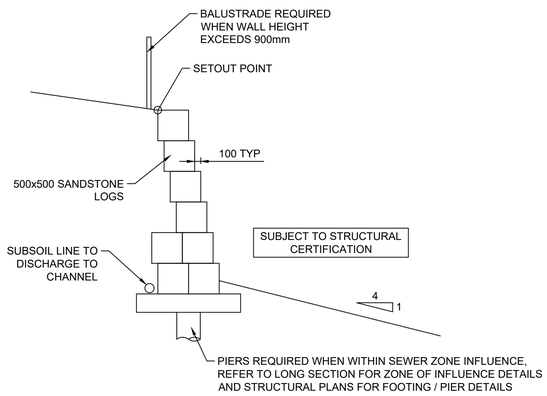
SECTION THROUGH TYPICAL SAFETY BENCHING
SCALE 1:40



SECTION A
SCALE H 1:100
V 1:100
CC403



SECTION B
SCALE H 1:50
V 1:50
CC405



TYPICAL SECTION THROUGH SANDSTONE LOG RETAINING WALL
SCALE 1:50

1:40 (AT A1) 800 400 0 800 1600 2400 3200 4000 MILLIMETRES

1:100 (AT A1) 1:200 (AT A3) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S7.11 WORKS
BASIN 3
GENERAL DETAILS

PLAN No: 11035005/CC429 A
FILE No: 11035005CC429
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:56:12 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC429.dwg

PIT SCHEDULE

PIT NAME (-)	PIT TYPE (-)	PIT EASTING (m)	PIT NORTHING (m)	PIT DEPTH (m)	COMMENTS
01/1	NODE	296484.82	6269742.80	2.72	OSD OUTLET CONTROL STRUCTURE
01/2	H.W. STACKED ROCK Auto	296457.43	6269786.41	1.80	CULVERTS TO PENETRATE STACKED ROCK RETAINING WALL
02/1	NODE	296457.53	6269681.21	0.40	OSD OUTLET CONTROL STRUCTURE
02/2	JP SEALED 900 x 900	296395.34	6269722.05	1.38	
02/3	1200x1200 RAINGARDEN INLET PIT	296371.28	6269738.60	0.70	
04/1	NODE	296536.28	6269736.57	0.46	OSD OUTLET CONTROL STRUCTURE
04/2	JP SEALED 900 x 900	296519.71	6269802.87	1.25	
03/3	1200x1200 RAINGARDEN INLET PIT	296393.34	6269735.84	0.70	
04/3	1200x1200 RAINGARDEN INLET PIT	296508.11	6269808.57	0.70	
05/2	1200x1200 RAINGARDEN INLET PIT	296520.55	6269814.73	0.70	
06/1	GPT	296448.10	6269571.10	4.17	EXISTING GPT
06/2	JP SEALED 900 x 900	296475.27	6269586.08	2.29	
06/3	H.W.	296486.87	6269591.51	0.60	CULVERT TO DISCHARGE THROUGH CONCRETE WALL
07/1	BCC RG Outlet	296411.61	6269793.54	1.45	
07/2	JP SEALED 900 x 900	296405.27	6269813.67	1.30	
07/3	JP SEALED 900 x 900	296374.23	6269835.10	1.21	
07/4	JP SEALED 900 x 900	296358.95	6269880.76	1.13	
07/5	H.W. STACKED ROCK	296364.58	6269896.02	0.60	
08/1	BCC RG Outlet	296393.56	6269798.72	1.15	
09/1	BCC RG Outlet	296485.05	6269866.98	1.45	
09/2	JP SEALED 900 x 900	296490.22	6269876.72	2.09	
09/3	JP SEALED 900 x 900	296478.60	6269952.79	1.43	
09/4	JP SEALED 900 x 900	296461.76	6270019.98	1.68	
09/5	H.W. STACKED ROCK	296437.92	6270050.00	0.60	
10/1	BCC RG Outlet	296500.23	6269872.74	1.45	
11/1	GPT	296599.73	6269796.91	3.23	EXISTING GPT
11/2	JP SEALED 900 x 900	296570.87	6269762.16	2.70	
11/3	H.W. STACKED ROCK	296557.11	6269738.84	1.05	
12/1	900x900 RAINGARDEN UPLOW PIT	296378.38	6269791.72	1.00	
12/2	900x900 RAINGARDEN UPLOW PIT	296366.29	6269775.95	1.00	
12/3	900x900 RAINGARDEN UPLOW PIT	296363.01	6269756.53	1.00	
12/4	900x900 RAINGARDEN UPLOW PIT	296376.90	6269751.33	1.00	
12/5	900x900 RAINGARDEN UPLOW PIT	296373.59	6269765.04	1.00	
12/6	900x900 RAINGARDEN UPLOW PIT	296385.22	6269781.21	1.00	
12/7	900x900 RAINGARDEN UPLOW PIT	296407.36	6269783.57	1.00	
12/8	900x900 RAINGARDEN UPLOW PIT	296407.15	6269767.58	1.00	
12/9	900x900 RAINGARDEN UPLOW PIT	296396.67	6269753.81	1.00	
12/10	900x900 RAINGARDEN UPLOW PIT	296405.68	6269746.01	1.00	
12/11	900x900 RAINGARDEN UPLOW PIT	296417.07	6269761.83	1.00	
12/12	900x900 RAINGARDEN UPLOW PIT	296419.42	6269781.51	1.00	
12/13	900x900 RAINGARDEN UPLOW PIT	296477.33	6269851.34	1.00	
12/14	900x900 RAINGARDEN UPLOW PIT	296478.29	6269831.48	1.00	
12/15	900x900 RAINGARDEN UPLOW PIT	296488.33	6269814.55	1.00	
12/16	900x900 RAINGARDEN UPLOW PIT	296502.66	6269819.28	1.00	
12/17	900x900 RAINGARDEN UPLOW PIT	296490.91	6269827.87	1.00	
12/18	900x900 RAINGARDEN UPLOW PIT	296489.34	6269847.73	1.00	
12/19	900x900 RAINGARDEN UPLOW PIT	296515.78	6269834.21	1.00	
12/20	900x900 RAINGARDEN UPLOW PIT	296514.88	6269851.50	1.00	
12/21	900x900 RAINGARDEN UPLOW PIT	296504.71	6269863.84	1.00	
12/22	900x900 RAINGARDEN UPLOW PIT	296515.24	6269870.05	1.00	
12/23	900x900 RAINGARDEN UPLOW PIT	296526.17	6269853.52	1.00	
12/24	900x900 RAINGARDEN UPLOW PIT	296527.70	6269834.09	1.00	

DESIGN STORM 0.5 EY HYDRAULIC RESULTS

PIPE NAME (-)	PIPE DIAMETER (mm)	PIPE TYPE (-)	PIPE LENGTH (m)	PIPE GRADE (%)	CRITICAL STORM (min)	PEAK FLOW (L/s)	CAPACITY RATIO (-)	PEAK VELOCITY (m/s)	PIPE U/S IL (m)	PIPE D/S IL (m)	PIPE D/S DROP (m)	U/S PIT Ku (-)	D/S PIT Kw (-)	PIT LOSS (Ku.V'head) (m)	WSE LOSS (Kw.V'head) (m)	U/S PIPE HGL (m)	D/S PIPE HGL (m)	HGL GRADE (%)	MINIMUM COVER (m)	MINIMUM FREEBOARD (m)	COMMENTS
02/1 to 02/2	1200x600	Box Culvert	74.59	0.5	120	2025	1.4	2.81	13	12.627	0.281	2.21	2.21	0.33	0.89	14.915	13.663	1.68	0.05	0.861	
02/2 to 02/3	900x600	Box Culvert	29.25	0.5	120	1126	1.11	2.09	12.346	12.2	-0.7	0.52	0.61	0.12	0.14	13.568	13.39	0.61	0.09	1.337	
02/2 to 03/3	900x600	Box Culvert	13.96	1.07	120	906	0.61	1.68	12.35	12.2	-0.7	1.72	1.79	0.24	0.25	13.446	13.39	0.4	0.1	1.337	
04/1 to 04/2	1200x600	Box Culvert	69.03	0.5	120	2025	1.4	2.81	13.003	12.658	0.393	2.21	2.21	0.34	0.89	14.975	13.783	1.73	-0.08	0.789	
04/2 to 04/3	900x600	Box Culvert	12.92	0.5	120	1020	1.01	1.89	12.265	12.2	-0.7	1.76	1.9	0.31	0.34	13.483	13.418	0.5	0.1	1.217	
04/2 to 05/2	900x600	Box Culvert	12.29	0.5	120	1015	1	1.88	12.261	12.2	-0.7	1.76	2.25	0.32	0.41	13.478	13.418	0.49	0.1	1.217	
07/1 to 07/2	600	RRJ3	21.32	1	120	430	0.65	1.52	11.75	11.537	0.119	1.5	1.5	0.18	0.18	13.213	13.124	0.42	0.51	1.61	
07/2 to 07/3	(2x)600	RRJ3	38.06	0.5	120	868	0.92	1.54	11.417	11.227	0.05	1.83	2.13	0.22	0.26	12.905	12.743	0.43	0.45	0.876	
07/3 to 07/4	(2x)600	RRJ3	48.72	0.5	120	868	0.92	1.54	11.177	10.934	0.05	1.17	1.4	0.14	0.17	12.602	12.394	0.43	0.42	1.257	
07/4 to 07/5	(2x)600	RRJ3	16.7	0.5	120	868	0.92	1.54	10.884	10.8		1.44	1.57	0.17	0.19	12.221	12.15	0.43		1.606	
08/1 to 07/2	600	RRJ3	19.12	1	120	438	0.66	1.55	11.75	11.559	0.141	1.5	1.5	0.18	0.18	13.207	13.124	0.43	0.51	1.61	
09/1 to 09/2	600	RRJ3	11.48	1	120	498	0.75	1.76	11.75	11.635	0.331	1.5	1.5	0.24	0.24	13.181	13.116	0.57	0.51	1.582	
09/2 to 09/3	(2x)600	RRJ3	77.22	1	120	999	0.75	1.77	11.304	10.532	0.05	1.68	1.72	0.23	0.27	12.895	12.425	0.61	0.41	1.884	
09/3 to 09/4	(2x)600	RRJ3	69.63	1	120	999	0.75	1.77	10.482	9.786	0.05	1.61	1.95	0.24	0.31	12.191	11.781	0.59	0.79	1.575	
09/4 to 09/5	(2x)600	RRJ3	38.55	1	120	999	0.75	1.77	9.736	9.35		1.65	1.87	0.26	0.3	11.518	11.3	0.57	0.3	2.219	
10/1 to 09/2	600	RRJ3	10.82	1	120	501	0.75	1.77	11.75	11.642	0.338	1.5	1.5	0.24	0.24	13.178	13.116	0.57	0.51	1.582	

DESIGN STORM 10% AEP HYDRAULIC RESULTS

PIPE NAME (-)	PIPE DIAMETER (mm)	PIPE TYPE (-)	PIPE LENGTH (m)	PIPE GRADE (%)	CRITICAL STORM (min)	PEAK FLOW (L/s)	CAPACITY RATIO (-)	PEAK VELOCITY (m/s)	PIPE U/S IL (m)	PIPE D/S IL (m)	PIPE D/S DROP (m)	U/S PIT Ku (-)	D/S PIT Kw (-)	PIT LOSS (Ku.V'head) (m)	WSE LOSS (Kw.V'head) (m)	U/S PIPE HGL (m)	D/S PIPE HGL (m)	HGL GRADE (%)	MINIMUM COVER (m)	MINIMUM FREEBOARD (m)	COMMENTS
06/1 to 06/2	1200	RRJ2	31.33	1	120	2094	0.5	1.85	13.447	13.135	0.144	0	0	0	0	16.223	16.146	0.25	0.96	1.394	EXISTING PIPE
06/2 to 06/3	1500x600	Box Culvert	13	0.7	120	2094	0.93	2.33	12.991	12.9		1.33	1.41	0.37	0.39	15.779	15.7	0.61	-0.52	0.854	
11/1 to 11/2	(2x)1050	RRJ2	46.18	0.5	120	2844	0.68	1.64	13.763	13.533	0.52	0	0	0	0	16.067	15.96	0.23	1.05	0.931	EXISTING PIPE
11/2 to 11/3	(2x)1050	RRJ3	27.53	1.5	120	2844	0.39	1.64	13.013	12.6		1.43	1.53	0.2	0.21	15.764	15.7	0.23	0.42	0.54	

DESIGN STORM 1% AEP HYDRAULIC RESULTS

PIPE NAME (-)	PIPE DIAMETER (mm)	PIPE TYPE (-)	PIPE LENGTH (m)	PIPE GRADE (%)	CRITICAL STORM (min)	PEAK FLOW (L/s)	CAPACITY RATIO (-)	PEAK VELOCITY (m/s)	PIPE U/S IL (m)	PIPE D/S IL (m)	PIPE D/S DROP (m)	U/S PIT Ku (-)	D/S PIT Kw (-)	PIT LOSS (Ku.V'head) (m)	WSE LOSS (Kw.V'head) (m)	U/S PIPE HGL (m)	D/S PIPE HGL (m)	HGL GRADE (%)	MINIMUM COVER (m)	MINIMUM FREEBOARD (m)	COMMENTS
01/1 to 01/2	(2x)2400x1800	Box Culvert	51.5	0.5	20	20171	0.62	2.95	12.43	12.172		4.5	4.5	1.25	1.25	13.887	13.222	1.29	1.1	1.869	

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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CLIENT: Stockland

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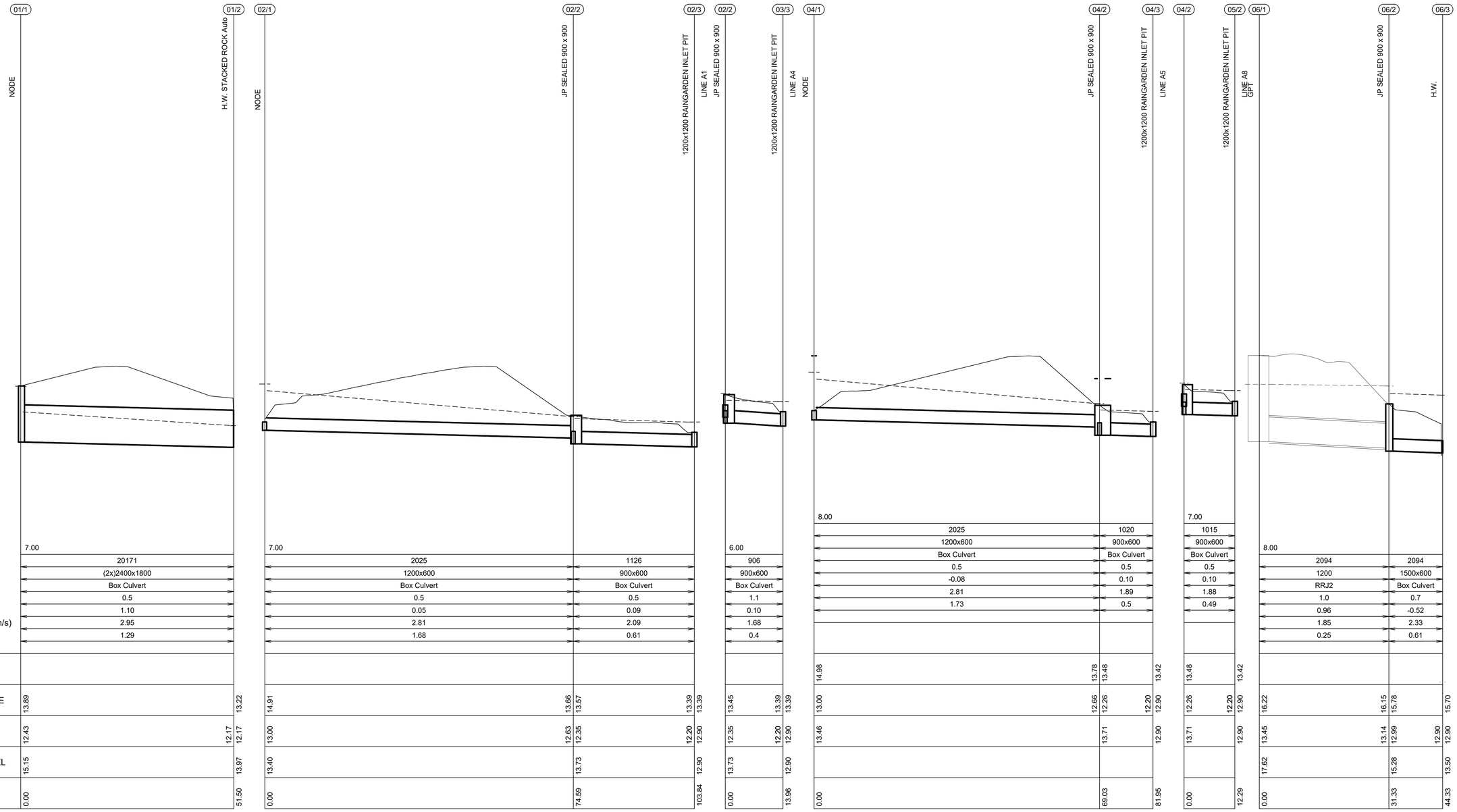
ELARA S7.11 WORKS
BASIN 3
STORMWATER PIT SCHEDULE AND CALCULATION TABLES

PLAN No: 11035005/CC430 A
FILE No: 11035005CC430
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:56:23 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC430.dwg



V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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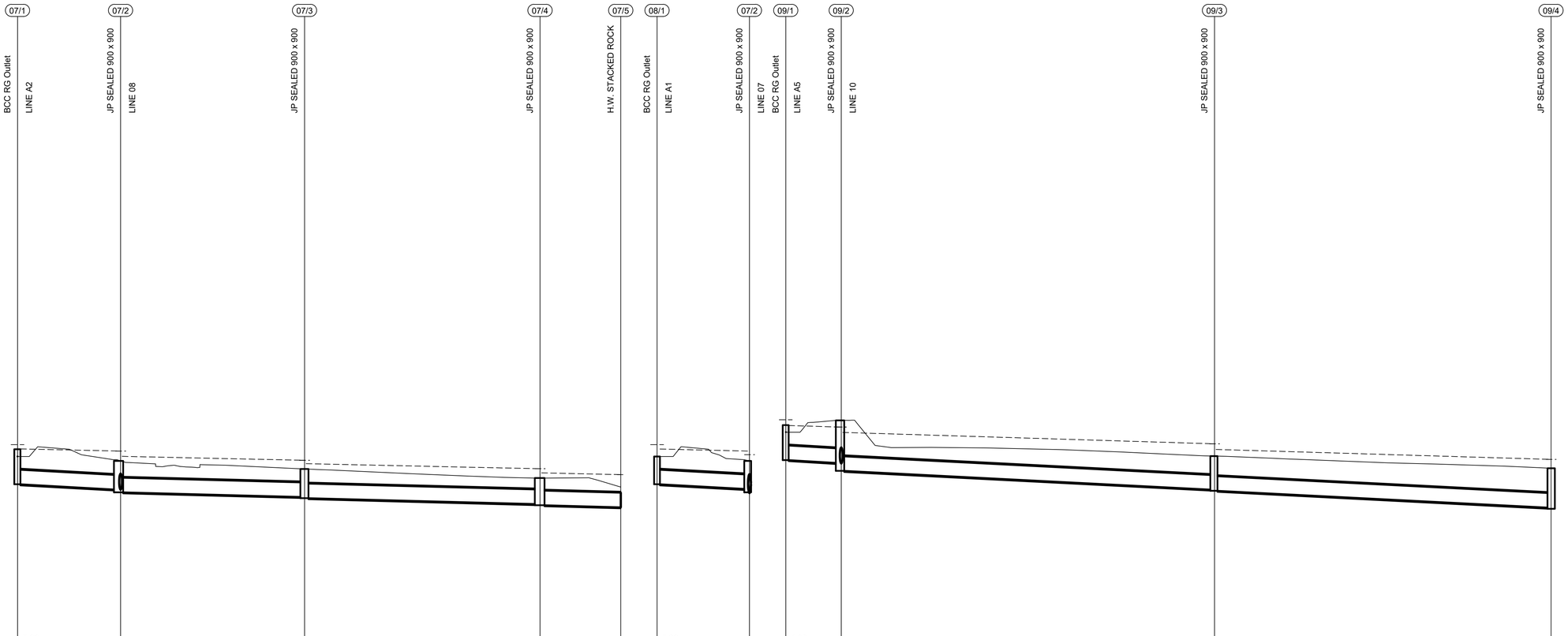
ELARA S7.11 WORKS
BASIN 3
STORMWATER LONGITUDINAL SECTIONS
SHEET 1

PLAN No: 11035005/CC431 A
FILE No: 11035005CC431
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:56:32 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC431.dwg



DATUM (m)	5.00																							
PEAK FLOW (L/s)	430		868				868				868				438				498		999			
PIPE SIZE (mm)	600		(2x)600				(2x)600				(2x)600				600				600		(2x)600			
PIPE CLASS	RRJ3		RRJ3				RRJ3				RRJ3				RRJ3				RRJ3		RRJ3			
PIPE GRADE (%)	1.0		0.5				0.5				0.5				1.0				1.0		1.0			
PIPE COVER MINIMUM	0.51		0.45				0.42								0.51				0.51		0.41			
FULL PIPE VELOCITY (m/s)	1.52		1.54				1.54				1.54				1.55				1.76		1.77			
HGL GRADE (%)	0.42		0.43				0.43				0.43				0.43				0.57		0.61			
WAE																								
HYDRAULIC GRADE LINE	13.21	13.12	12.90			12.74	12.60			12.39	12.22		12.15	13.21	13.12	12.90	13.18	13.12	12.90			12.43	12.19			11.78
INVERT LEVEL	11.75	11.54	11.42			11.23	11.18			10.93	10.88		10.80	11.75	11.56	11.42	11.75	11.64	11.30			10.53	10.48			9.79
DESIGN SURFACE LEVEL	13.20		12.71				12.38				12.01		11.40	12.90		12.71	13.20		13.39				11.92			11.41
PIPE CHAINAGE	0.00		21.32				59.38				108.09		124.79	0.00		19.12	0.00		11.48				88.69			158.32

LINE 07 - 0.5 EY

LINE 08 0.5 EY

LINE 09 - 0.5 EY

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

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	AMENDMENT	DES	DRN	CKD	APR	DATE

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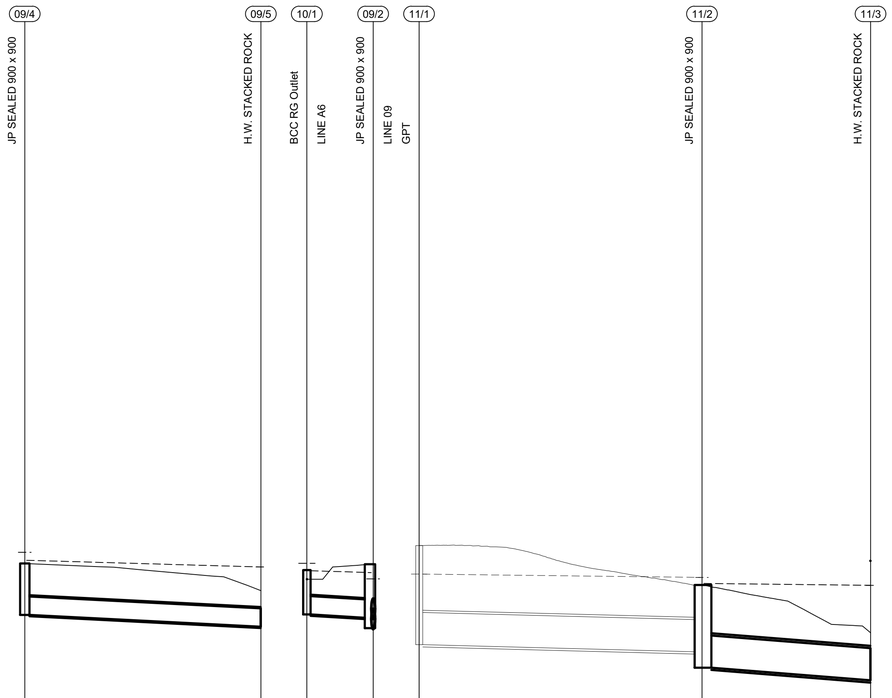
ELARA S7.11 WORKS
BASIN 3
STORMWATER LONGITUDINAL SECTIONS
SHEET 2

PLAN No: 11035005/CC432 A

FILE No: 11035005CC432

SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:56:39 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC432.dwg



DATUM (m)		3.00						5.00				8.00				
PEAK FLOW (L/s)		999						501				2844			2844	
PIPE SIZE (mm)		(2x)600						600				(2x)1050			(2x)1050	
PIPE CLASS		RRJ3						RRJ3				RRJ2			RRJ3	
PIPE GRADE (%)		1.0						1.0				0.5			1.5	
PIPE COVER MINIMUM		0.30						0.51				1.05			0.42	
FULL PIPE VELOCITY (m/s)		1.77						1.77				1.64			1.64	
HGL GRADE (%)		0.57						0.57				0.23			0.23	
WAE																
HYDRAULIC GRADE LINE	11.78	11.52				11.30	13.18		13.12	12.90	16.07		15.96	15.76		15.70
INVERT LEVEL	9.79	9.74			9.35	9.35	11.75		11.64	11.30	13.76		13.53	13.01	12.60	12.60
DESIGN SURFACE LEVEL		11.41				9.95	13.20			13.39	17.00			15.71		13.65
PIPE CHAINAGE		158.32				196.87	0.00			10.82	0.00			46.18		73.71

LINE 09 - 0.5 EY

LINE 10 0.5 EY

LINE 11 - 10% AEP

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

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	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S7.11 WORKS
BASIN 3
STORMWATER LONGITUDINAL SECTIONS
SHEET 3

PLAN No: 11035005/CC433 A

FILE No: 11035005CC433

SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:56:46 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC433.dwg

B3 PATH 1

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296646.17	6269476.89	181°40'46.47"		
12.39	296645.78	6269463.74		29.9	24.79
24.79	296635.83	6269455.14	229°10'42.58"		
25.91	296634.97	6269454.4	229°10'42.58"		
29.47	296632.25	6269452.05		20	7.12
33.03	296628.88	6269450.8	249°34'37.07"		
86.47	296578.8	6269432.15	249°34'37.07"		

B3 PATH 2

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
386	296549.13	6269356.29	15°18'14.01"		
393.14	296551.01	6269363.17	15°18'14.01"		
449.7	296567.5	6269423.41		-107.25	113.12
506.26	296523.23	6269467.48	314°52'21.42"		

B3 PATH 3

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296379.48	6269666.04	86°48'38.18"		
5.25	296384.73	6269666.34	86°48'38.18"		
28.97	296408.68	6269667.67		-130	47.44
52.69	296430.58	6269677.46	65°54'08.05"		
57.11	296434.61	6269679.27	65°54'08.05"		
68.88	296445.52	6269684.15		-55	23.54
80.65	296453.42	6269693.12	41°22'40.01"		
83.3	296455.17	6269695.11	41°22'40.01"		
110.57	296473.32	6269715.71		190	54.53
137.83	296496.56	6269730.33	57°49'18.56"		
139.27	296497.77	6269731.09	57°49'18.56"		
172.77	296526.62	6269749.24		148	67
206.27	296560.5	6269752.95	83°45'37.22"		
207.94	296562.16	6269753.13	83°45'37.22"		
234.55	296589.59	6269756.13		-82	53.23
261.16	296609.62	6269775.1	46°34'07.98"		
296.41	296635.22	6269799.33	46°34'07.98"		

B3 PATH 4

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296614.78	6269356.77	350°45'44.68"		
14.59	296612.44	6269371.17	350°45'44.68"		
18.62	296611.79	6269375.15		50	8.06
22.65	296611.79	6269379.19	0°00'00.00"		
26.9	296611.79	6269383.44	0°00'00.00"		
37.86	296611.79	6269394.69		-40	21.93
48.83	296605.93	6269404.29	328°35'04.20"		
76.97	296590.74	6269429.17		-87.6	56.27
105.1	296563.67	6269439.98			
105.1	296563.67	6269439.98			
113.67	296555.7	6269443.17		100	17.14
122.24	296548.38	6269447.67	301°35'54.81"		
194.84	296480.18	6269489.62		138.5	145.19
267.43	296482.51	6269569.65			
267.43	296482.51	6269569.65			
287.77	296483.15	6269591.95		-39.8	40.67
308.1	296464.47	6269604.14			
308.1	296464.47	6269604.14			
337.09	296439.55	6269620.39		-105.25	57.98
366.08	296409.81	6269621.19	271°33'01.76"		
366.83	296409.06	6269621.22	271°33'01.76"		

B3 PATH 5

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296645.1	6269469.79	63°43'48.96"		
0.05	296645.14	6269469.81	63°43'48.96"		
23.27	296667.86	6269481.02		-46.8	46.44
46.49	296670.89	6269506.17	6°52'42.35"		
46.55	296670.9	6269506.23	6°52'42.35"		
60.25	296672.65	6269520.71		-32.5	27.41
73.96	296662.99	6269531.64			
73.97	296662.98	6269531.65			
81.21	296658.03	6269537.26		-22.75	14.47
88.44	296650.71	6269538.83			
88.44	296650.71	6269538.83			
99.02	296640.31	6269541.07		82.75	21.15
109.59	296630.82	6269545.85	296°45'39.94"		
122.68	296619.13	6269551.75	296°45'39.94"		

B3 PATH 6

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296554.58	6269398.58	20°40'41.78"		
5.95	296556.68	6269404.14	20°40'41.78"		
8.44	296557.56	6269406.48		29.2	4.99
10.93	296558.83	6269408.63			
10.95	296558.83	6269408.64			
26.62	296566.91	6269422.39		69.5	31.34
42.28	296580.18	6269431.23			
42.3	296580.19	6269431.24	56°17'51.24"		

B3 PATH 7

CHAINAGE	EASTING	NORTHING	BEARING
0	296517.82	6269421.73	81°00'09.98"
31.45	296548.88	6269426.65	81°00'09.98"

B3 PATH 8

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296507.08	6269443.5	26°32'23.88"		
1.26	296507.65	6269444.63	26°32'23.88"		
5.11	296509.46	6269448.25		-10	7.7
8.96	296508.23	6269452.12			
8.97	296508.23	6269452.13			
27.63	296502.55	6269470.05		127.9	37.32
46.29	296502.27	6269488.84	359°08'33.16"		
51.82	296502.19	6269494.37	359°08'33.16"		

B3 PATH 9

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296461.97	6269605.72	322°24'21.53"		
15.64	296452.43	6269618.11	322°24'21.53"		
46.5	296431.03	6269645.91		52	61.73
77.37	296448.79	6269676.16	30°25'16.04"		
113.86	296467.27	6269707.63	30°25'16.04"		

B3 PATH 10

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296578.43	6269715.07	358°03'24.55"		
3.04	296578.33	6269718.11	358°03'24.55"		
14.17	296577.95	6269729.44		48	22.26
25.3	296582.67	6269739.74	24°37'46.11"		
25.58	296582.78	6269739.99	24°37'46.11"		
32.67	296585.75	6269746.46		80	14.2
39.77	296589.81	6269752.3	34°47'47.07"		
58.36	296600.42	6269767.57	34°47'47.07"		

B3 PATH 11

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296671.21	6269440.29	312°33'47.72"		
0	296671.21	6269440.3			
5.51	296667.14	6269444.03		-87.84	11.02
11.02	296662.64	6269447.22			
11.02	296662.64	6269447.22			
20.88	296654.39	6269453.08		-35.28	19.71
30.73	296644.29	6269453.67	273°22'04.50"		
40.26	296634.77	6269454.23	273°22'04.50"		

B3 PATH 12

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296645.04	6269609.91	251°13'53.22"		
1.58	296643.55	6269609.4	251°13'53.22"		
4.23	296640.98	6269608.53		10	5.29
6.88	296638.32	6269609.07	281°33'32.22"		
15.42	296629.95	6269610.78	281°33'32.22"		
18.24	296627.19	6269611.35		-50	5.64
21.06	296624.37	6269611.6	275°05'36.61"		
21.82	296623.62	6269611.67	275°05'36.61"		
34.54	296610.67	6269612.82		-50	25.43
47.25	296598.8	6269607.53	245°57'09.00"		
50.92	296595.46	6269606.03	245°57'09.00"		
51.35	296595.06	6269605.86		5	0.87
51.78	296594.64	6269605.75	255°52'41.21"		
53.43	296593.04	6269605.35	255°52'41.21"		

B3 PATH 14

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296503.14	6269492.81	40°00'40.31"		
0.05	296503.17	6269492.84	40°00'40.31"		
34.95	296528.28	6269522.75		-62.5	69.81
69.86	296512.4	6269558.43	336°00'48.10"		
69.99	296512.35	6269558.55	336°00'48.10"		
117.77	296491.28	6269605.9		-99.6	95.57
165.55	296440.42	6269615.82	281°02'13.52"		
165.88	296440.1	6269615.88	281°02'13.52"		

B3 PATH 15

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296450.15	6269558.74	92°00'03.25"		
12.28	296462.43	6269558.31	92°00'03.25"		
17.13	296468.88	6269558.09		-5.75	9.7
21.98	296468.36	6269564.52	355°21'13.97"		
30.24	296467.69	6269572.75	355°21'13.97"		
32.16	296467.54	6269574.67		-30	3.83
34.07	296467.14	6269576.54	348°02'00.71"		
51.78	296463.37	6269594.33		-63.36	35.41
69.48	296450.74	6269607.41	316°00'45.31"		
79.42	296443.84	6269614.56	316°00'45.31"		

B3 PATH 16

CHAINAGE	EASTING	NORTHING	BEARING
0	296669.49	6269520.33	71°13'53.22"
6.99	296676.11	6269522.57	71°13'53.22"

B3 PATH 18

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296527.08	6269745.3	89°41'25.54"		
14.18	296541.26	6269745.38	89°41'25.54"		
25.12	296552.38	6269745.44		50	21.88
36.06	296562.48	6269740.78	114°46'05.82"		
37.31	296563.61	6269740.26	114°46'05.82"		
48.72	296574.83	6269735.08		24	22.82
60.13	296577.14	6269722.94	169°14'43.84"		
65.18	296578.08	6269717.99	169°14'43.84"		
66.21	296578.27	6269716.97		20	2.06
67.24	296578.36	6269715.94	175°09'40.48"		
69.59	296578.56	6269713.6	175°09'40.48"		
87.42	296580.08	6269695.61		94.2	35.67
105.26	296574.85	6269678.34	196°51'23.93"		
105.48	296574.78	6269678.13	196°51'23.93"		
130.36	296567.12	6269652.85		-60	49.76
155.24	296580.59	6269630.13			
155.24	296580.59	6269630.13			
175.35	296590.96	6269612.64		111.77	40.22
195.46	296594.51	6269592.62			
195.46	296594.51	6269592.62			
204.41	296596.09	6269583.71		-48	17.89
213.36	296600.8	6269575.98	148°35'35.62"		
229.67	296609.34	6269562.01		-153.25	32.62
245.98	296620.63	6269550.15	136°23'51.10"		
245.99	296620.63	6269550.15	136°23'51.10"		
254.75	296626.71	6269543.77		73.9	17.52
263.51	296631.11	6269536.15			
263.52	296631.11	6269536.14			
291.71	296645.52	6269511.21		111.85	56.37
319.89	296646.09	6269482.42	178°51'26.46"		
323.95	296646.18	6269478.36	178°51'26.46"		
324.68	296646.19	6269477.63		29.8	1.47
325.42	296646.17	6269476.89	181°40'46.95"		
325.42	296646.17	6269476.89	181°40'46.95"		
337.85	296645.78	6269463.65		-29	24.86
350.28	296655.54	6269454.68	132°33'48.29"		
371.55	296671.21	6269440.29	132°33'48.29"		
389.44	296684.57	6269428.02		87.84	35.78
407.33	296691.97	6269411.46	155°54'07.90"		
407.65	296692.11	6269411.17	155°54'07.90"		

BASIN 3 EMBANKMENT

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH
0	296371.04	6269660.01	54°27'55.58"		
10.11	296379.26	6269665.88	54°27'55.58"		
13.45	296382.01	6269667.84		-20	6.69
16.8	296383.96	6269670.6	35°17'56.86"		
45.88	296400.76	6269694.33	35°17'56.86"		
179.3	296485.94	6269814.63		252.5	266.84
312.72	296632.57	6269799.61	95°50'59.07"		
325.46	296645.25	6269798.31	95°50'59.07"		

ELEMENT	DESCRIPTION	PAVEMENT
B3 PATH 1	SHARED PATH 3m WIDE WITH PEDESTRIAN BRIDGE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
B3 PATH 2	SHARED PATH 2.5m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
B3 PATH 3	COMBINED SHARED PATH / MAINTENANCE ACCESS 3m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
B3 PATH 4	COMBINED SHARED PATH / MAINTENANCE ACCESS 3m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
B3 PATH 5	FOOTPATH 1.5m WIDE	125mm THICK CONCRETE
B3 PATH 6	SHARED PATH 2.5m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
B3 PATH 7	FOOTPATH 1.5m WIDE	125mm THICK CONCRETE
B3 PATH 8	FOOTPATH 2m WIDE	125mm THICK CONCRETE
B3 PATH 9	COMBINED SHARED PATH / MAINTENANCE ACCESS 3m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
B3 PATH 10	FOOTPATH 1.5m WIDE	125mm THICK CONCRETE
B3 PATH 11	COMBINED SHARED PATH / MAINTENANCE ACCESS 3m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
B3 PATH 12	FOOTPATH 1m WIDE	125mm THICK CONCRETE
B3 PATH 14	SHARED PATH 3m WIDE WITH PEDESTRIAN BRIDGE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
B3 PATH 15	FOOTPATH 1.5m WIDE	125mm THICK CONCRETE
B3 PATH 16	FOOTPATH 1.5m WIDE	125mm THICK CONCRETE
B3 PATH 18	COMBINED SHARED PATH / MAINTENANCE ACCESS 3m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER
B3 EMBANKMENT	COMBINED SHARED PATH / MAINTENANCE ACCESS 4m WIDE	125mm THICK CONCRETE WITH SL82 MESH WITH 35mm TOP COVER

NOTES:

1. ALL PATHS ARE TO BE CONSTRUCTED TO BLACKTOWN CITY COUNCILS 'PATH PAVING POLICY 2009'
2. ALL PATH CROSS FALLS ARE TO BE AS PER THE DTM AND GENERALLY FALL AT 1 TO 2% TOWARDS THE PERMANENT POND.

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CLIENT: Stockland

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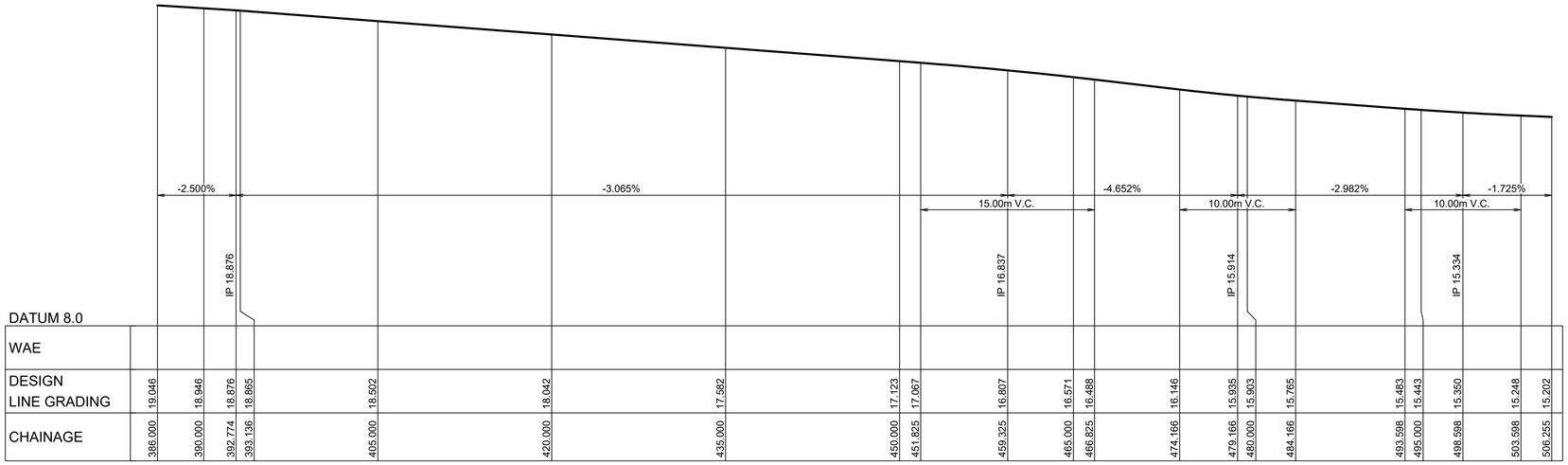
ELARA S7.11 WORKS
BASIN 3
SETOUT TABLES AND FOOTPATH DETAILS

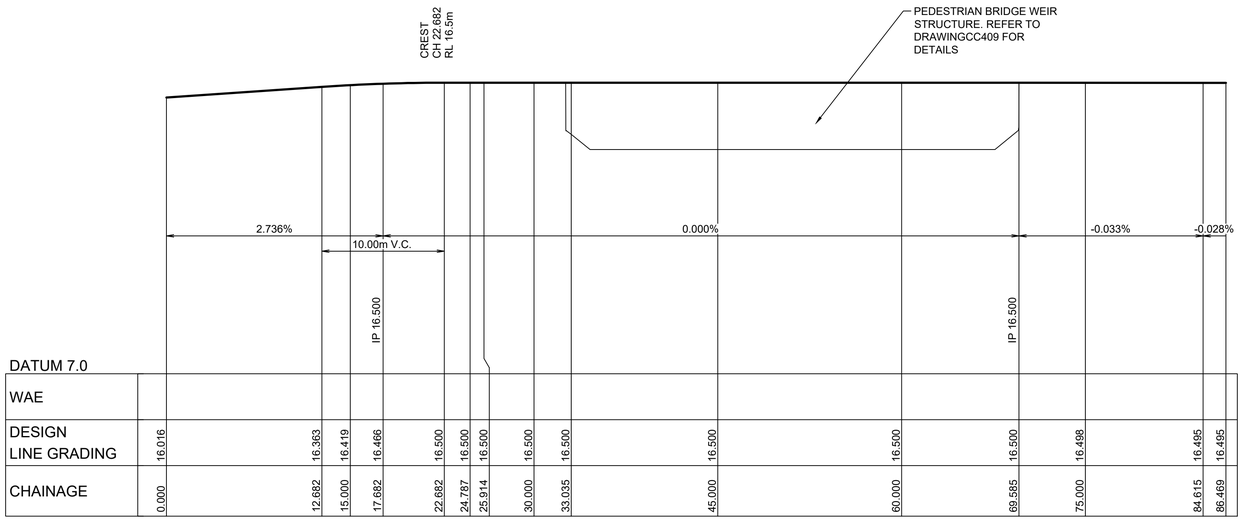
PLAN No: 11035005/CC434 A
FILE No: 11035005CC434
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:56:53 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC434.dwg



LONGITUDINAL SECTION B3 PATH 2

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



LONGITUDINAL SECTION B3 PATH 1

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:250 (AT A1) 5 0 5 10 15 20 25 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
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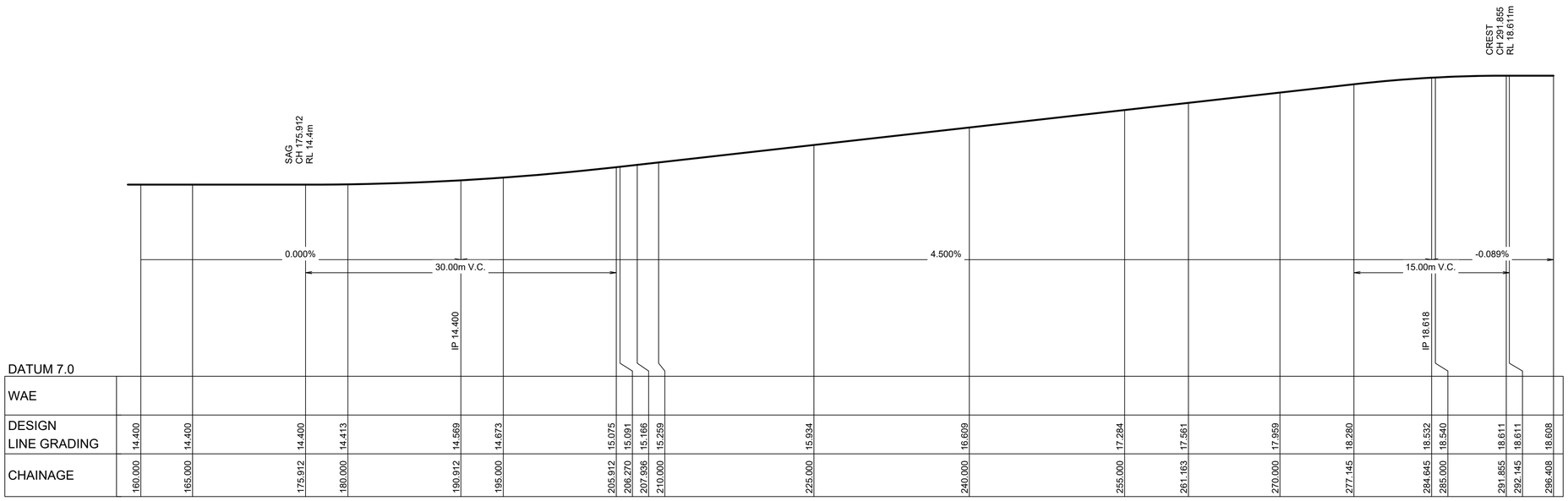
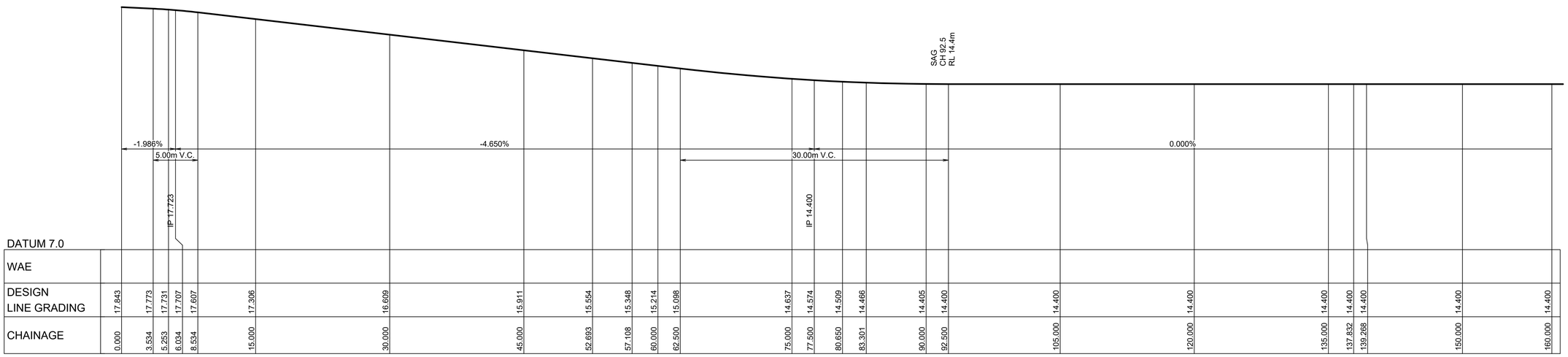
ELARA S7.11 WORKS
BASIN 3
FOOTPATH LONGITUDINAL SECTIONS
SHEET 1

PLAN No: 11035005/CC435 A
FILE No: 11035005CC435
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:57:05 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC435.dwg



LONGITUDINAL SECTION B3 PATH 3
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



LONGITUDINAL SECTION B3 PATH 3
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:250 (AT A1) 5 0 5 10 15 20 25 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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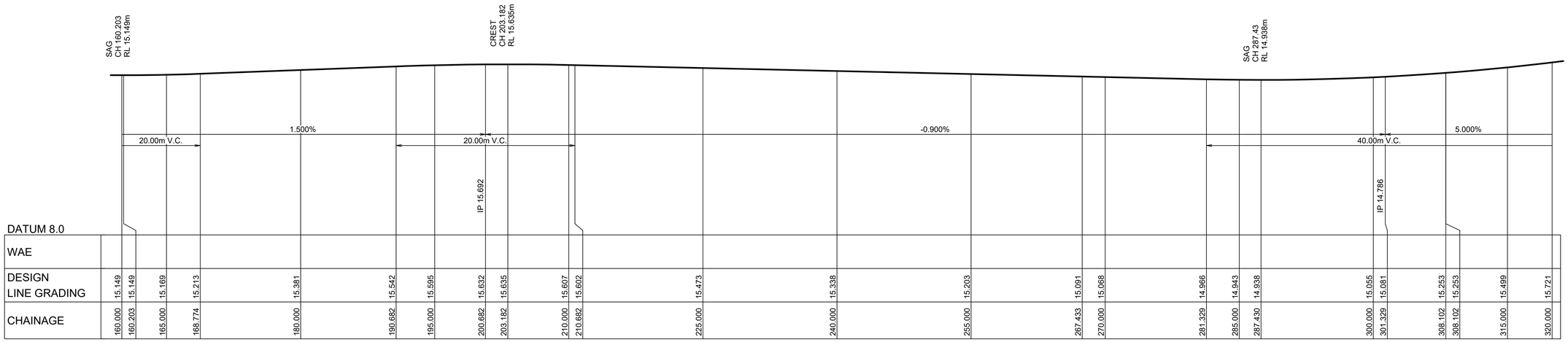
ELARA S7.11 WORKS
BASIN 3
FOOTPATH LONGITUDINAL SECTIONS
SHEET 2

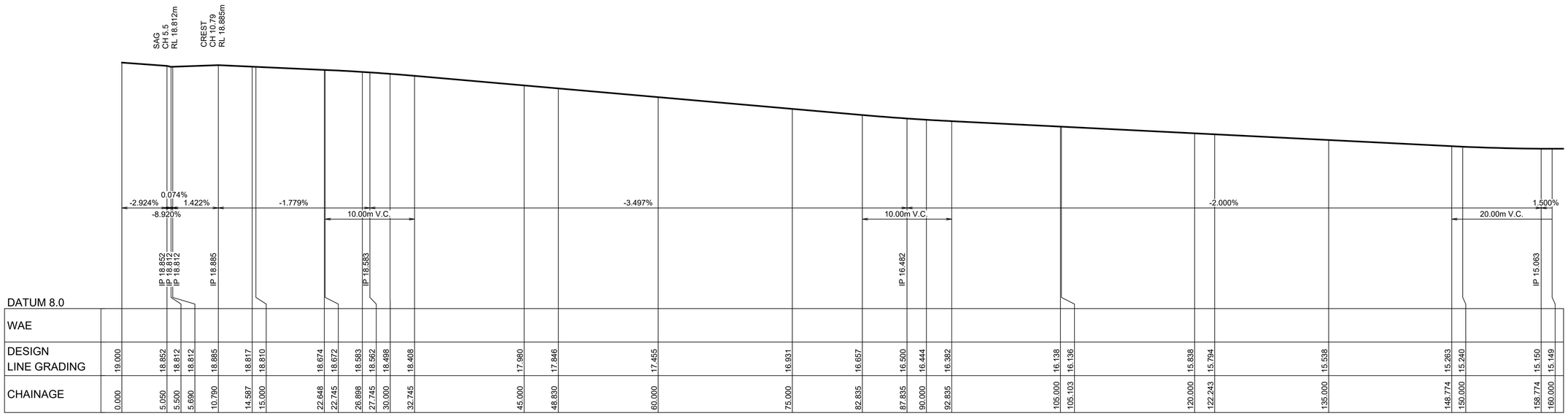
PLAN No: 11035005/CC436 A
FILE No: 11035005CC436
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:57:16 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC436.dwg



LONGITUDINAL SECTION B3 PATH 4

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



LONGITUDINAL SECTION B3 PATH 4

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:250 (AT A1) 5 0 5 10 15 20 25 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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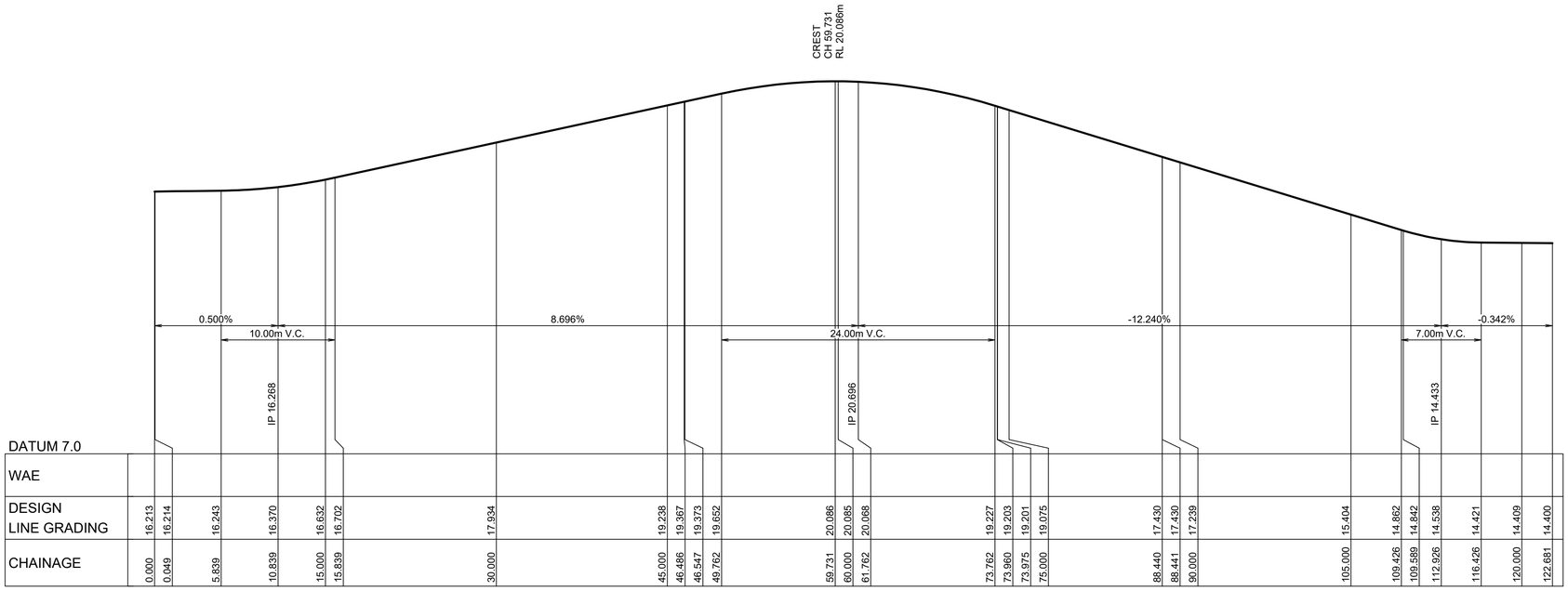
ELARA S7.11 WORKS
BASIN 3
FOOTPATH LONGITUDINAL SECTIONS
SHEET 3

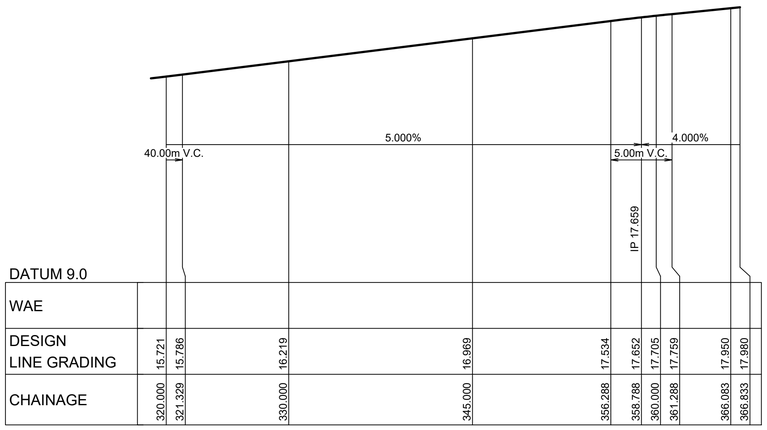
PLAN No: 11035005/CC437 A
FILE No: 11035005CC437
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:57:27 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC437.dwg



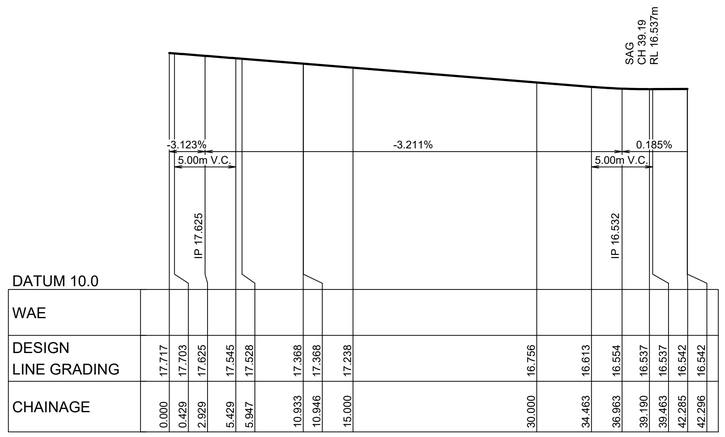
LONGITUDINAL SECTION B3 PATH 5

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



LONGITUDINAL SECTION B3 PATH 4

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



LONGITUDINAL SECTION B3 PATH 6

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:250 (AT A1) 5 0 5 10 15 20 25 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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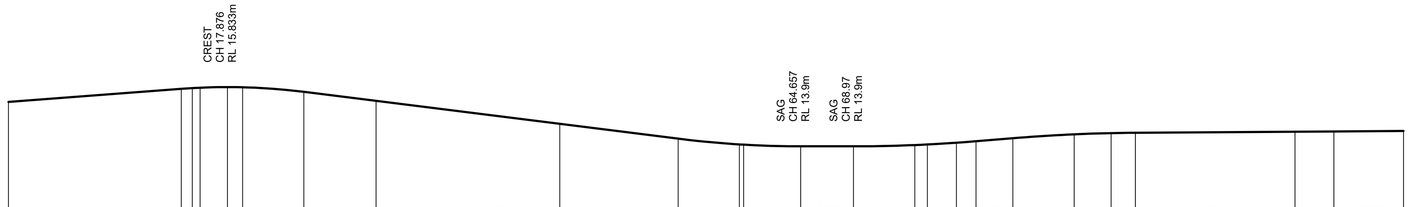
ELARA S7.11 WORKS
BASIN 3
FOOTPATH LONGITUDINAL SECTIONS
SHEET 4

PLAN No: 11035005/CC438 A
FILE No: 11035005CC438
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:57:38 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC438.dwg

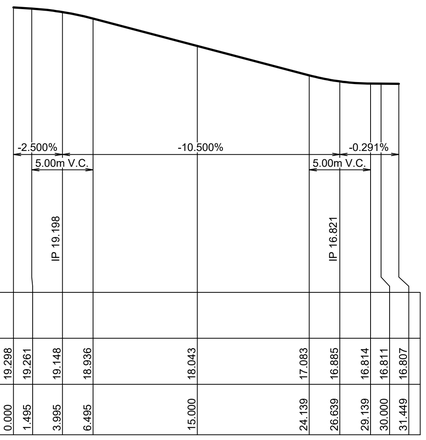


DATUM 7.0

WAE																												
DESIGN LINE GRADING	15.350	15.776	15.800	15.813	15.833	15.827	15.677	15.383	14.633	14.150	13.962	13.954	13.900	13.900	13.941	13.960	14.016	14.065	14.164	14.291	14.331	14.342	14.377	14.385	14.400
CHAINAGE	0.000	14.108	15.000	15.639	17.876	19.108	24.108	30.000	45.000	54.657	59.657	60.000	64.657	68.970	73.970	75.000	77.367	78.970	81.977	86.977	90.000	91.977	105.000	108.178	113.863

LONGITUDINAL SECTION B3 PATH 9

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

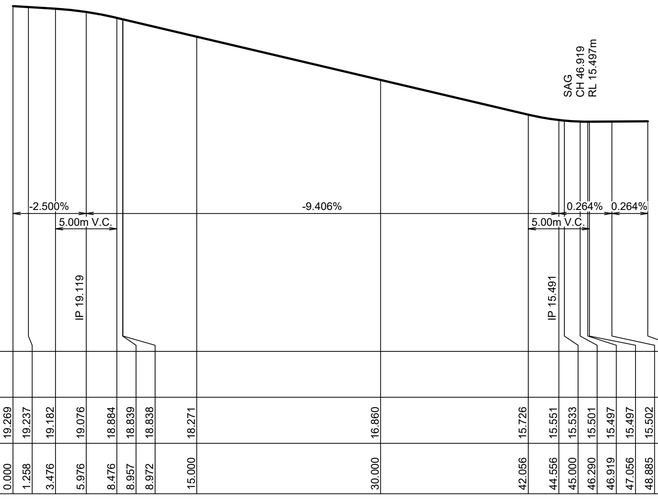


DATUM 10.0

WAE										
DESIGN LINE GRADING	19.298	19.261	19.148	18.936	18.043	17.083	16.885	16.814	16.811	16.807
CHAINAGE	0.000	1.495	3.995	6.495	15.000	24.139	26.639	29.139	30.000	31.449

LONGITUDINAL SECTION B3 PATH 7

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 8.0

WAE																
DESIGN LINE GRADING	19.269	19.237	19.182	19.076	18.884	18.839	18.838	18.271	16.860	15.726	15.551	15.533	15.501	15.497	15.497	15.502	15.510
CHAINAGE	0.000	1.258	3.476	5.976	8.476	8.957	8.972	15.000	30.000	42.056	44.556	45.000	46.290	46.919	47.056	48.885	51.819

LONGITUDINAL SECTION B3 PATH 8

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:250 (AT A1) 5 0 5 10 15 20 25 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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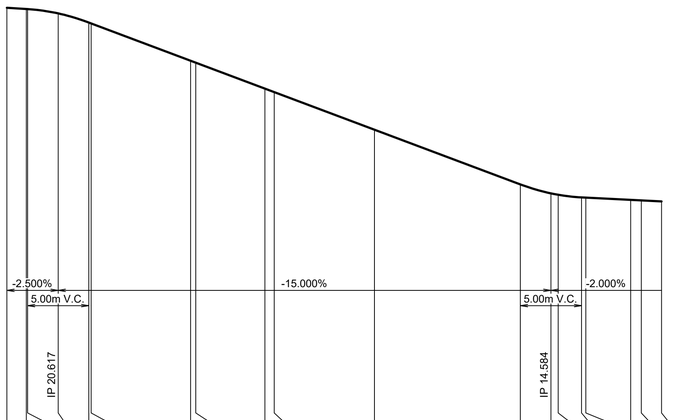
ELARA S7.11 WORKS
BASIN 3
FOOTPATH LONGITUDINAL SECTIONS
SHEET 5

PLAN No: 11035005/CC439 A
FILE No: 11035005CC439
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:57:49 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC439.dwg



DATUM 7.0

WAE																				
DESIGN LINE GRADING	20.722	20.683	20.680	20.539	20.242	20.214	18.996	18.932	18.086	17.972	16.746	14.959	14.666	14.620	14.534	14.527	14.454	14.437	14.404	
CHAINAGE	0.000	1.584	1.688	4.188	6.688	6.877	15.000	15.421	21.063	21.824	30.000	41.908	44.408	45.000	46.908	47.254	50.915	51.781	53.431	

LONGITUDINAL SECTION B3 PATH 12

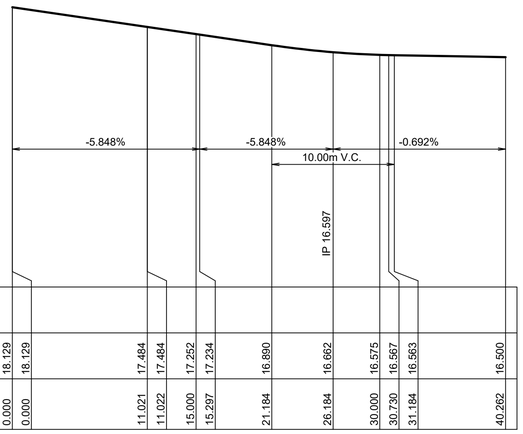
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

DATUM 7.0

WAE																
DESIGN LINE GRADING	14.400	14.405	14.418	14.497	14.508	14.763	15.098	15.117	15.415	16.073	16.087	16.396	16.397	16.649	17.026	
CHAINAGE	0.000	3.042	10.317	15.000	15.317	20.317	25.303	25.576	30.000	39.772	39.985	44.985	45.000	49.985	58.364	

LONGITUDINAL SECTION B3 PATH 10

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



DATUM 9.0

WAE												
DESIGN LINE GRADING	18.129	18.129	17.484	17.484	17.252	17.234	16.890	16.662	16.575	16.567	16.563	16.500
CHAINAGE	0.000	0.000	11.021	11.022	15.000	15.297	21.184	26.184	30.000	30.730	31.184	40.262

LONGITUDINAL SECTION B3 PATH 11

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:250 (AT A1) 5 0 5 10 15 20 25 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
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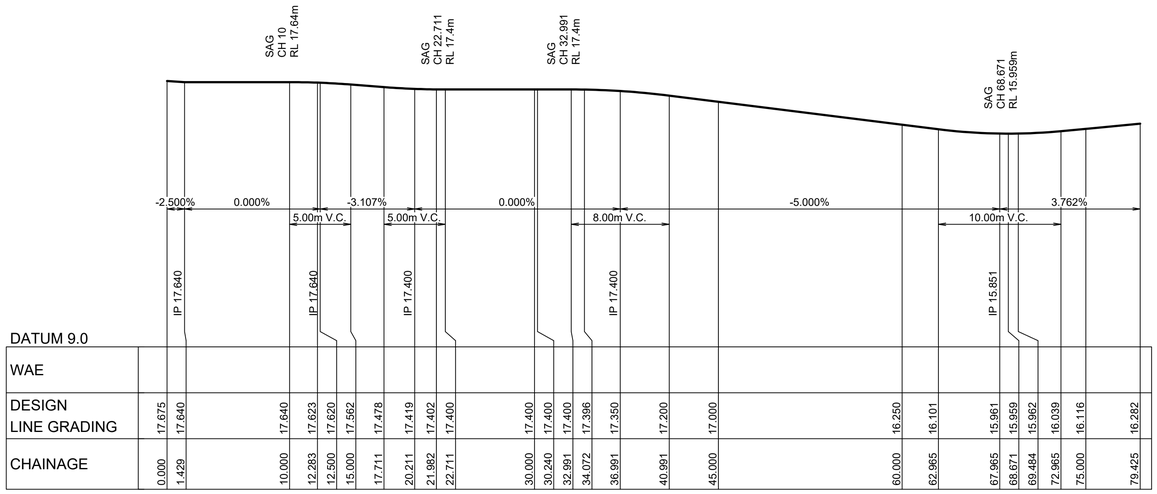
ELARA S7.11 WORKS
BASIN 3
FOOTPATH LONGITUDINAL SECTIONS
SHEET 6

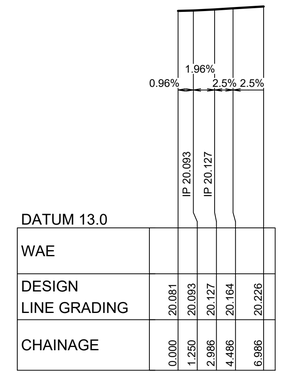
PLAN No: 11035005/CC440 A
FILE No: 11035005CC440
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:58:00 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC440.dwg



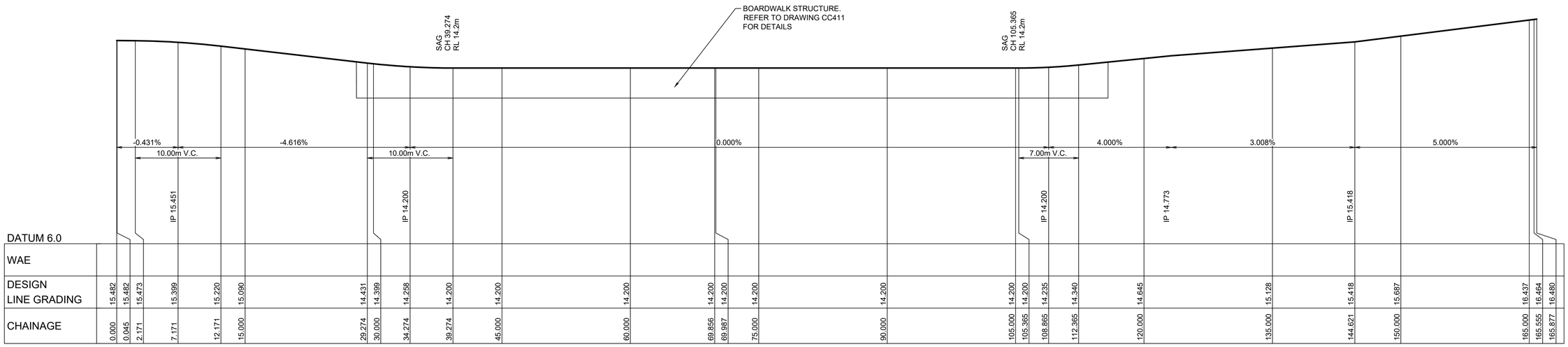
LONGITUDINAL SECTION B3 PATH 15

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



LONGITUDINAL SECTION B3 PATH 16

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



LONGITUDINAL SECTION B3 PATH 14

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:250 (AT A1) 5 0 5 10 15 20 25 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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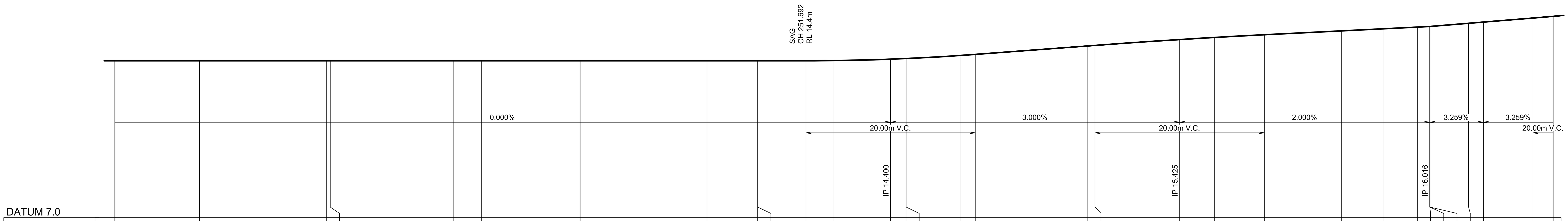
ELARA S7.11 WORKS
BASIN 3
FOOTPATH LONGITUDINAL SECTIONS
SHEET 7

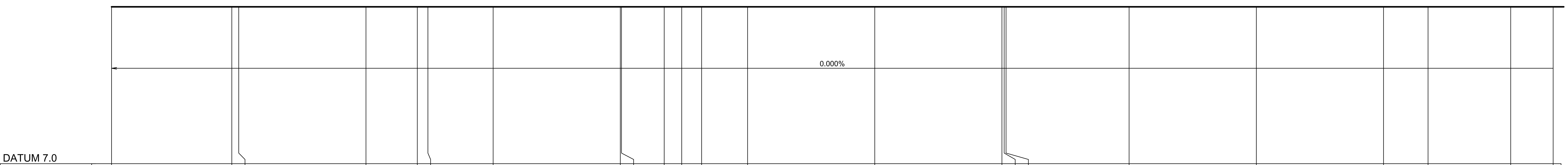
PLAN No: 11035005/CC441 A
FILE No: 11035005CC441
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:58:11 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC441.dwg



CHAINAGE	DESIGN LINE GRADING	WAE
170.000	14.400	
180.000	14.400	
195.000	14.400	
195.464	14.400	
210.000	14.400	
213.358	14.400	
225.000	14.400	
240.000	14.400	
245.978	14.400	
245.990	14.400	
251.692	14.400	
255.000	14.408	
261.692	14.475	
263.511	14.505	
263.523	14.505	
270.000	14.651	
271.692	14.700	
285.000	15.099	
285.858	15.125	
295.858	15.400	
300.000	15.499	
305.858	15.625	
315.000	15.808	
319.890	15.906	
323.947	15.987	
325.415	16.016	
325.417	16.016	
325.418	16.016	
330.000	16.165	
331.742	16.222	
337.625	16.414	
340.000	16.495	

LONGITUDINAL SECTION B3 PATH 18
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100



CHAINAGE	DESIGN LINE GRADING	WAE
0.000	14.400	
14.178	14.400	
15.000	14.400	
30.000	14.400	
36.063	14.400	
37.312	14.400	
45.000	14.400	
60.000	14.400	
60.132	14.400	
65.177	14.400	
67.241	14.400	
69.589	14.400	
75.000	14.400	
90.000	14.400	
105.000	14.400	
105.258	14.400	
105.481	14.400	
120.000	14.400	
135.000	14.400	
150.000	14.400	
155.244	14.400	
165.000	14.400	
170.000	14.400	

LONGITUDINAL SECTION B3 PATH 18
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:250 (AT A1) 5 0 5 10 15 20 25 METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18

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AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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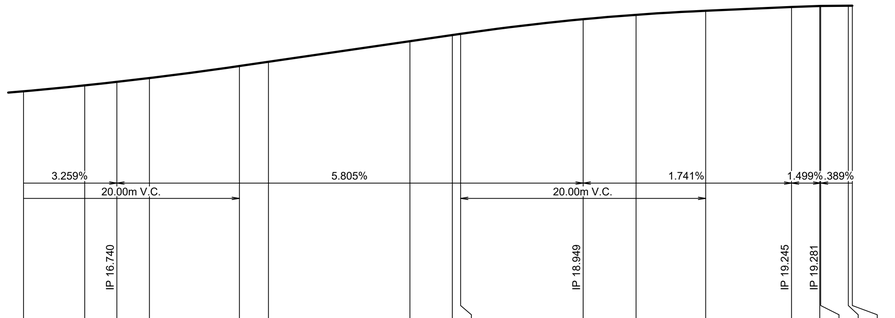
ELARA S7.11 WORKS
BASIN 3
FOOTPATH LONGITUDINAL SECTIONS
SHEET 8

PLAN No: 11035005/CC442 A
FILE No: 11035005CC442
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:58:22 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC442.dwg



DATUM 9.0

WAE																	
DESIGN LINE GRADING	16.495	16.689	16.804	16.928	17.320	17.458	18.129	18.329	18.369	18.847	18.992	19.123	19.245	19.280	19.281	19.290	19.291
CHAINAGE	340.000	345.000	347.625	350.277	357.625	360.000	371.547	375.000	375.680	385.680	390.000	395.680	402.693	405.000	405.066	407.328	407.652

LONGITUDINAL SECTION B3 PATH 18

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H 1:250 (AT A1) 5 0 5 10 15 20 25 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
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ELARA S7.11 WORKS
BASIN 3
FOOTPATH LONGITUDINAL SECTIONS
SHEET 9

PLAN No: 11035005/CC443 A
FILE No: 11035005CC443
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:58:33 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC443.dwg

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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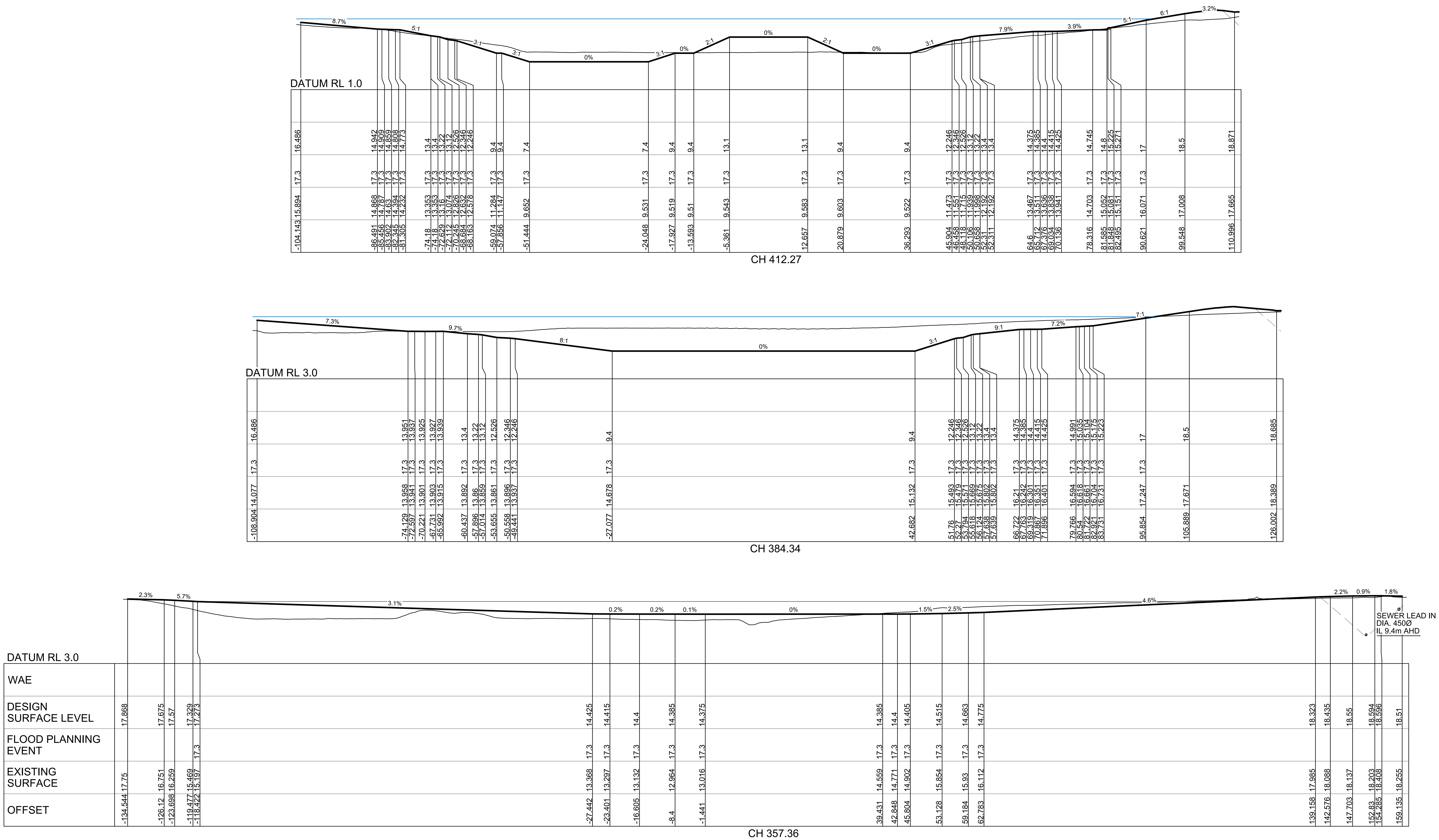
ELARA S7.11 WORKS
BASIN 3
SITE SECTION KEY PLAN

PLAN No: 11035005/CC444 A

FILE No: 11035005CC444

SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:58:50 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC444.dwg



H 1:500 (AT A1) — 10 0 10 20 30 40 50 METRES

V 1:500 (AT A1) — 10 0 10 20 30 40 50 METRES

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ELARA S7.11 WORKS
BASIN 3
SITE SECTIONS
SHEET 1

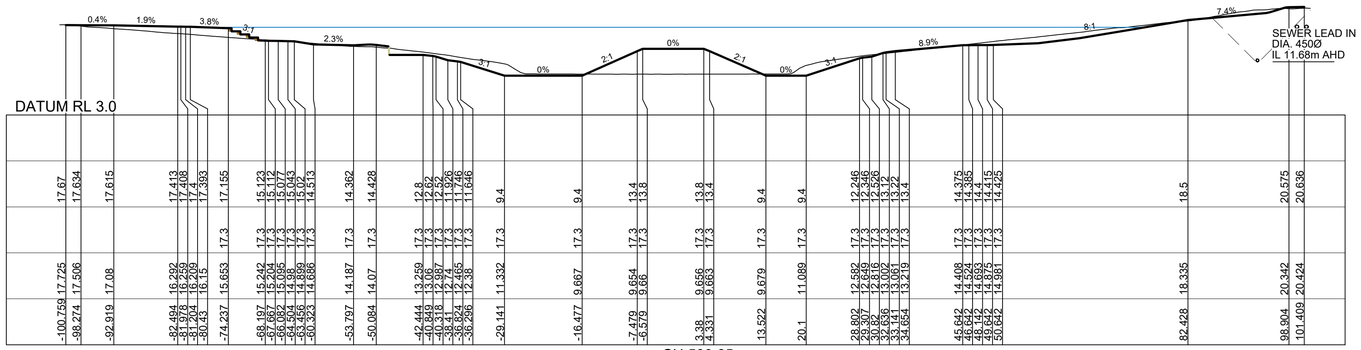
PLAN No: 11035005/CC445 A

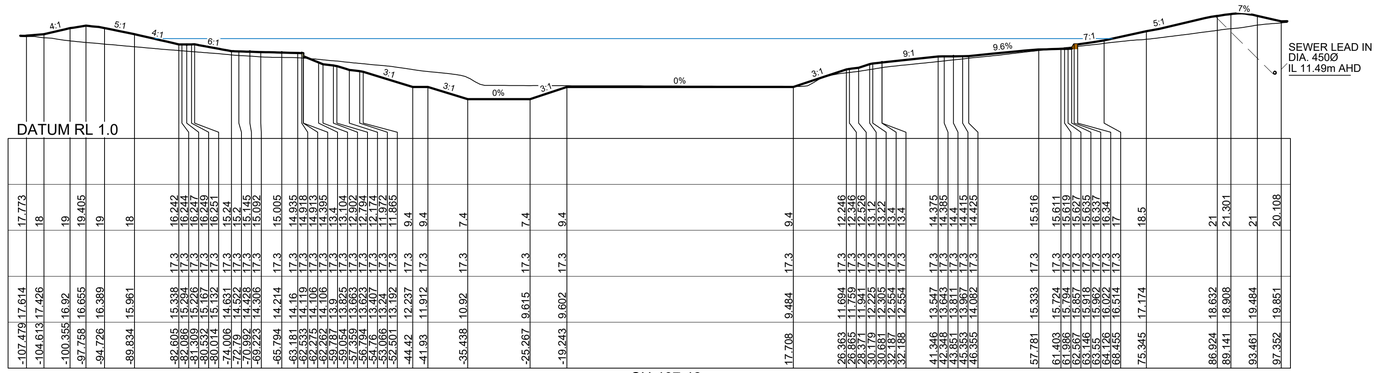
FILE No: 11035005CC445

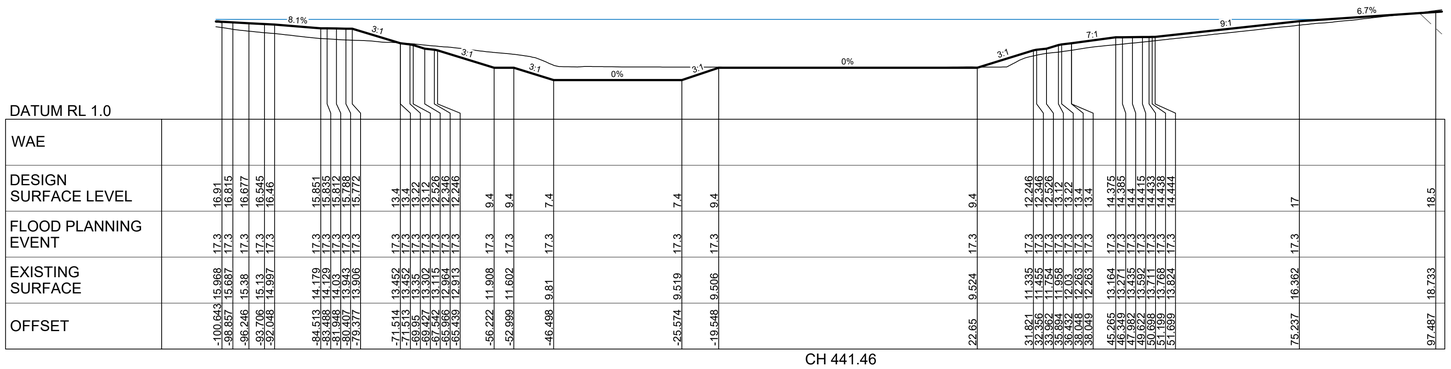
SHEET SIZE: A1 ORIGINAL

	AMENDMENT	DES	DRN	CKD	APR	DATE
A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18

Plotted: 15 November , 2018 4:59:02 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC445.dwg







H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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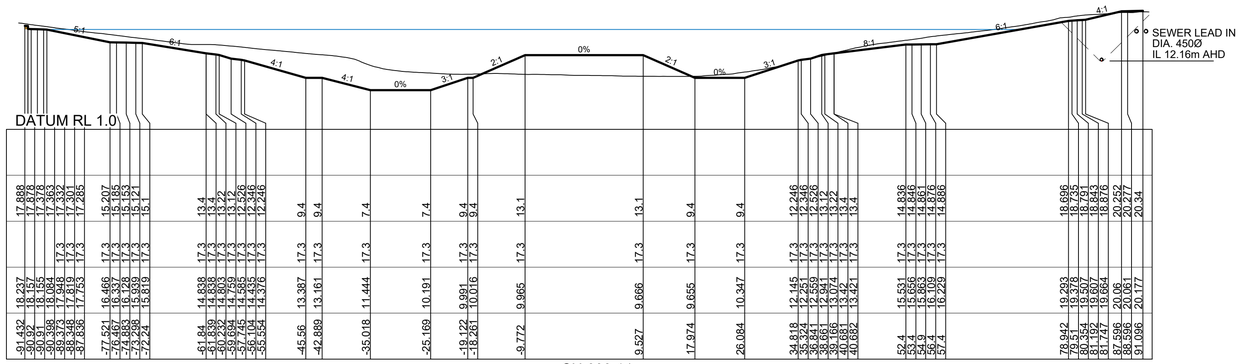
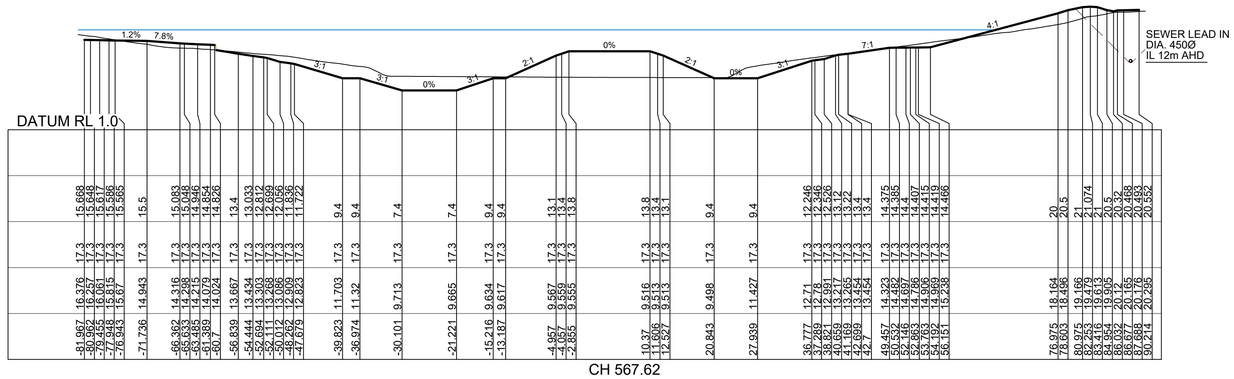
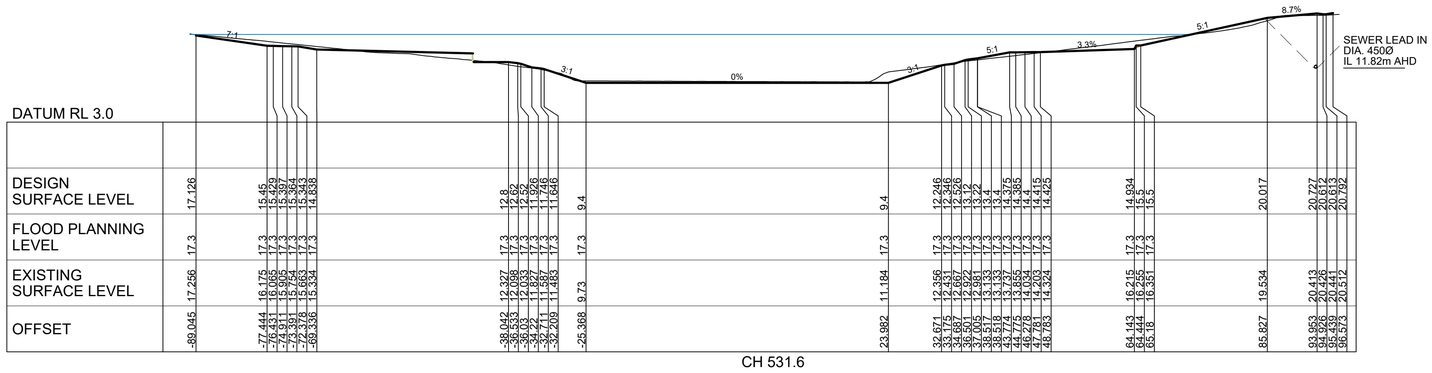
ELARA S7.11 WORKS
BASIN 3
SITE SECTIONS
SHEET 2

PLAN No: 11035005/CC446 A
FILE No: 11035005CC446
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:59:14 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC446.dwg







H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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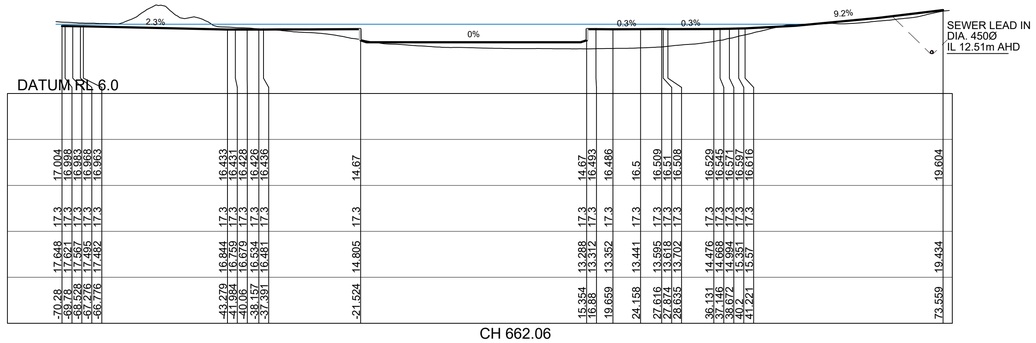
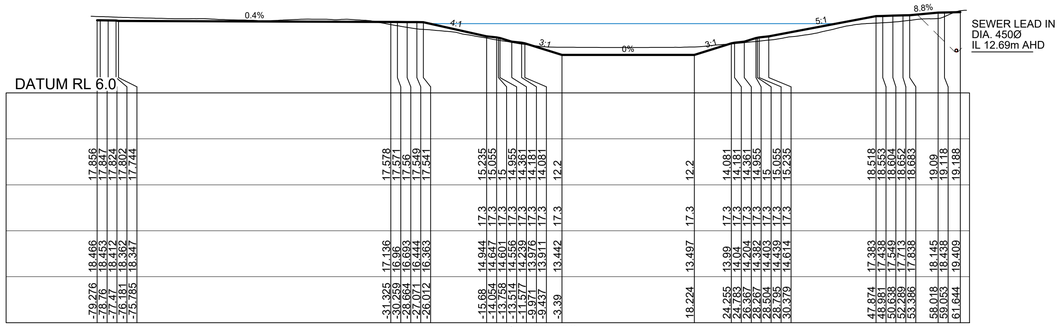
ELARA S7.11 WORKS
BASIN 3
SITE SECTIONS
SHEET 3

PLAN No: 11035005/CC447 A
FILE No: 11035005CC447
SHEET SIZE: A1 ORIGINAL

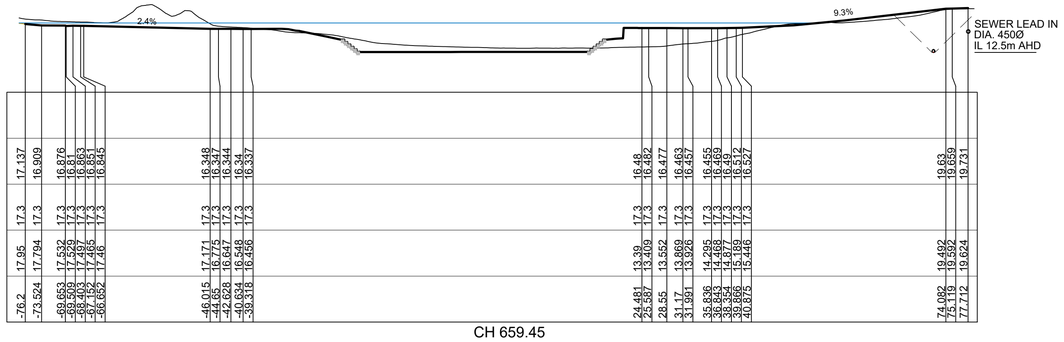
Plotted: 15 November , 2018 4:59:26 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC447.dwg



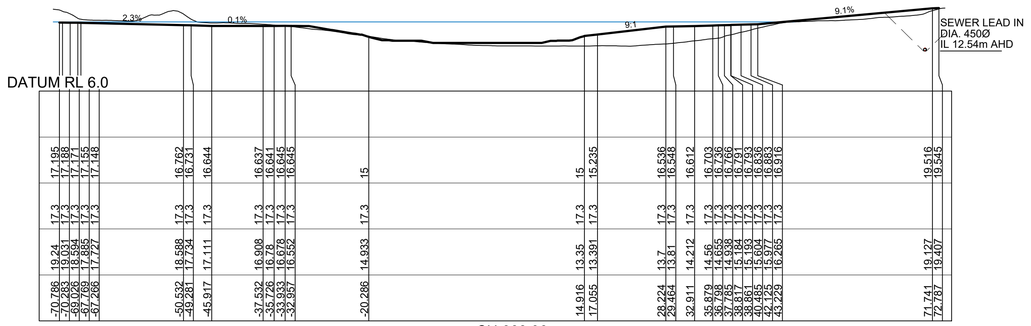
CH 662.06



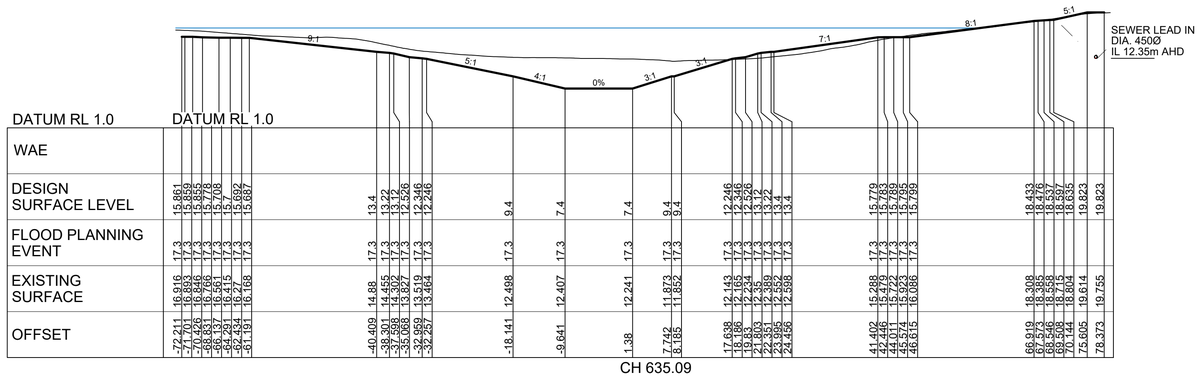
CH 694.02



CH 659.45



CH 668.06



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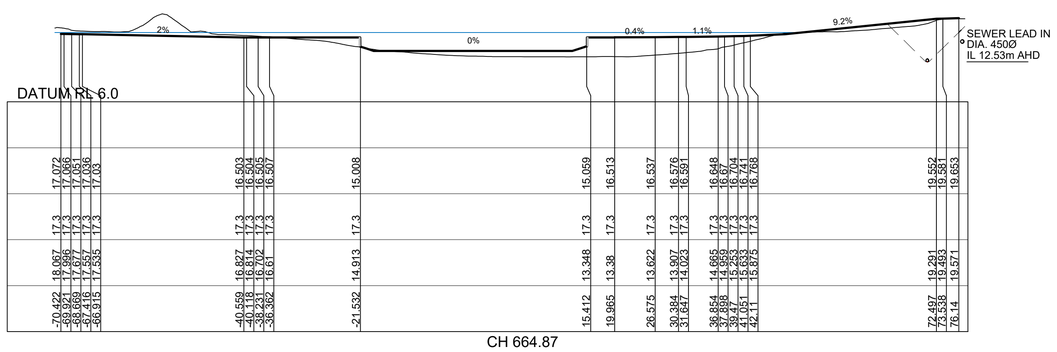

CH 664.87

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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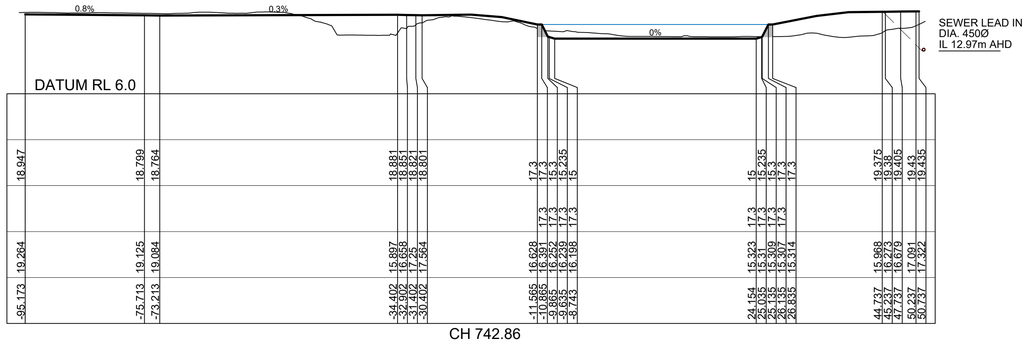
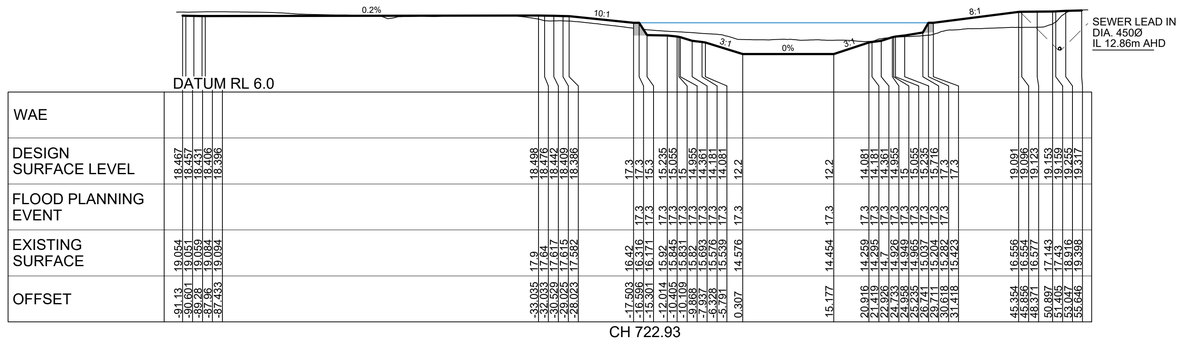
ELARA S7.11 WORKS
BASIN 3
SITE SECTIONS
SHEET 4

PLAN No: 11035005/CC448 A
FILE No: 11035005CC448
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 4:59:37 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC448.dwg





H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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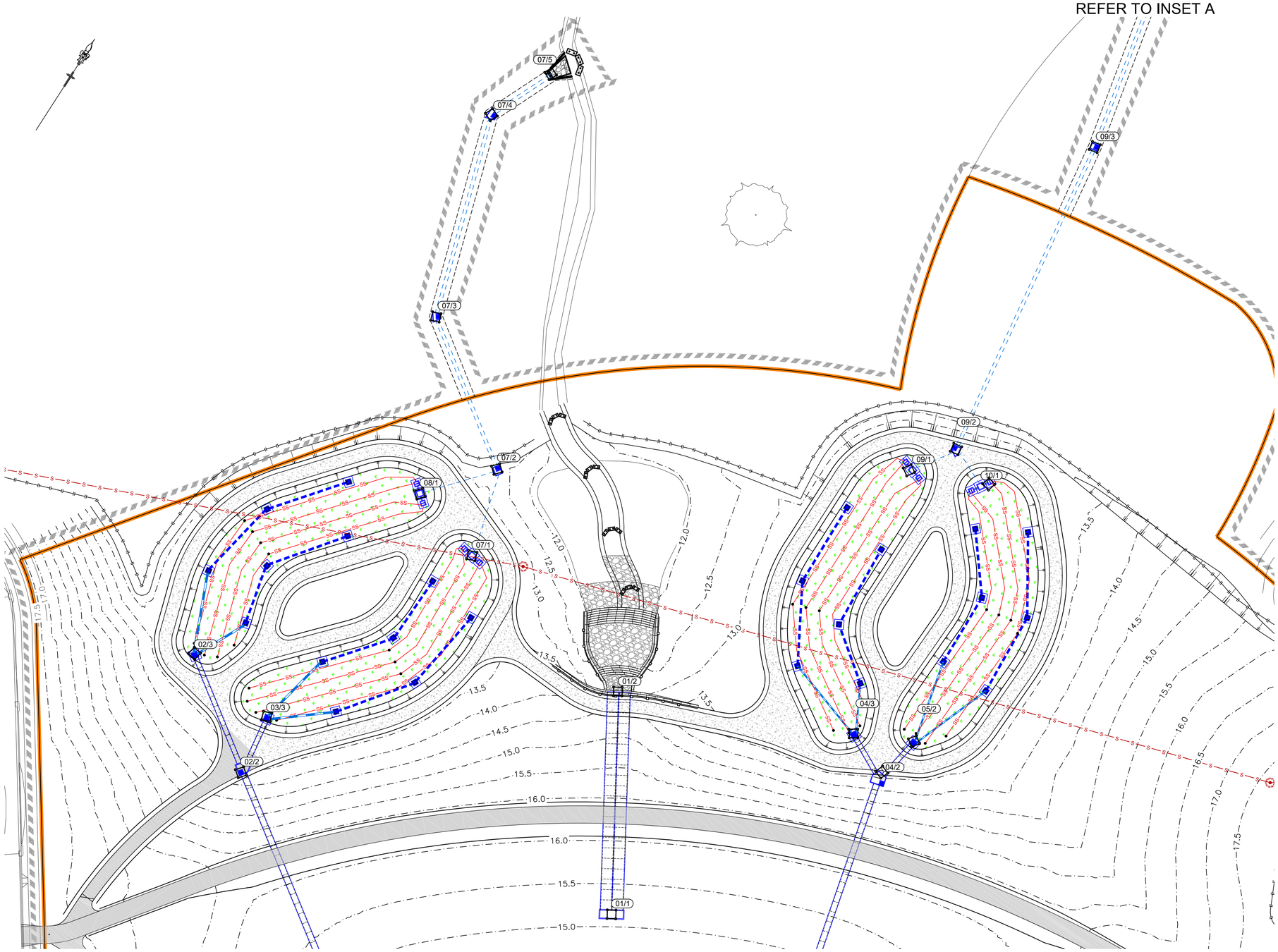
ELARA S7.11 WORKS
BASIN 3
SITE SECTIONS
SHEET 5

PLAN No: 11035005/CC449 A
FILE No: 11035005CC449
SHEET SIZE: A1 ORIGINAL

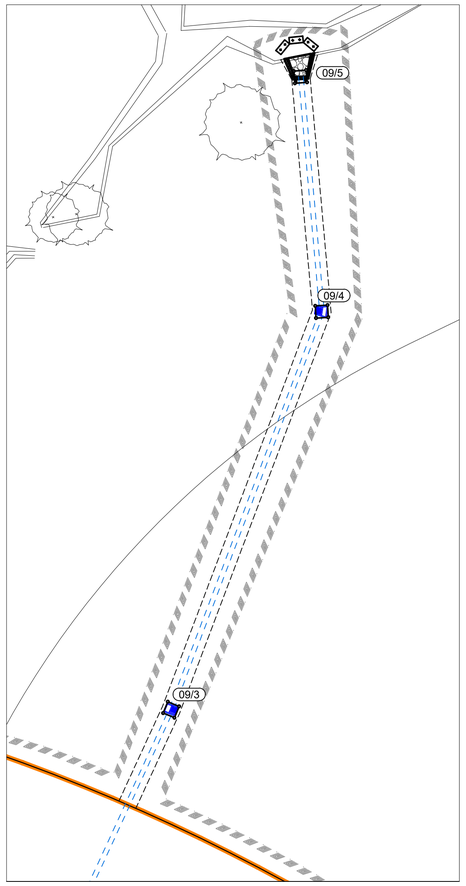
Plotted: 15 November , 2018 4:59:49 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC449.dwg

REFER TO INSET A



LEGEND

STABILISED SITE ACCESS	
SEDIMENT FENCE	
STRAW BALE BARRIER	
STOCKPILE	SP
PROTECTIVE FENCING	
DESIGN CONTOURS	46.0
EXISTING CONTOURS	47.0
SURFACE INLET SEDIMENT TRAP	
LIMIT OF WORKS	



INSET A

SCALE 1:500

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50

METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ELARA S7.11 WORKS
BASIN 3
SOIL & WATER MANAGEMENT PLAN

PLAN No: 11035005/CC450 A

FILE No: 11035005CC450

SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 5:00:39 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC450.dwg

SOIL AND WATER MANAGEMENT NOTES

GENERAL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE BLACKTOWN CITY COUNCIL.

2. BULK EARHWORKS ARE TO BE UNDERTAKEN IN STAGES. THE CONTRACTOR IS TO PREPARE A STAGING PLAN WHICH IS TO BE SUBMITTED TO THE PCA PRIOR TO THE COMMENCEMENT OF WORKS.

3. TOPSOIL FROM ALL AREAS TO BE DISTURBED SHALL BE STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN THOSE AREAS.

4. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILIZED AS EARLY AS POSSIBLE DURING DEVELOPMENT.

5. ALL TAIL-OUT DRAINS SHALL BE COUCH GRASSED AND TRAPEZOIDAL IN SECTION. STRAW BALES SHALL BE PLACED AS A SEDIMENT CONTROL DEVICE WHERE REQUIRED.

6. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING DEVELOPMENT CONFINING ACCESS WHERE POSSIBLE TO PROPOSED OR EXISTING ROAD ALIGNMENTS. AREAS TO BE LEFT UNDISTURBED SHALL BE MARKED OFF.

7. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.

8. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM 60% FULL OF SOLID MATERIALS, INCLUDING DURING THE MAINTENANCE PERIOD.

9. THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.

10. CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" ("THE BLUE BOOK").

11. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.

12. THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (PREF 2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES - WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDENTIFIED WITH BARRIER FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 10m	THE SITE MANAGER SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES. WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION.

NOTE:
WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED - ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE C-FACTORS BELOW 0.05 FROM 1st JANUARY TO 15th MAY USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

13. GENERALLY WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE AND WILL BE DETAILED IN THE CONSTRUCTION CERTIFICATE DRAWINGS. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:-

    a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE CC PLANS AND TO DETAIL(SD) 6-7.
    b. CONSTRUCT STABILISED SITE ACCESS AS SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-7.
    c. CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-3.
    d. PROVIDE TEMPORARY ACCESS TO THE SEDIMENT BASIN(S)AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6-7 OR BARRIER FENCING AND EARTH BANKS (SD) 5-2.
    e. PLACE SEDIMENT FENCING (SD) 6-7 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.
    f. CONSTRUCT SEDIMENT BASIN(S) GENERALLY IN ACCORDANCE WITH (SD) 6-4
    g. STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASIN(S) AS SOON AS FINAL LEVELS ARE ESTABLISHED
    h. CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE CC PLANS OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD) 4-1.
    i. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS.
    j. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
    k. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

14. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE

15. EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER THAN:-

    a. 2(h) - 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
    b. 2.5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
    c. 3(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
    d. 4(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
    e. 5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
    f. 6(h) - 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

    SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

16. PROTECTION FROM EROSIVE FORCES SHALL BE UNDERTAKEN ON ALL LANDS TO MEET THE REQUIREMENTS OF TABLE J3-3 "MAXIMUM ACCEPTABLE C-FACTORS AT NOMINATED TIMES DURING WORKS" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION"

17. TEMPORARY GROUND COVER IN SHEET FLOW AREAS IS TO BE IN ACCORDANCE WITH TABLE J3-4 "PLANT SPECIES FOR GROUND COVER" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" WHERE PRACTICAL FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATED AREAS

18. WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO BE SCHEDULED SO THAT THE TIME FROM STARTING LAND DISTURBANCE ACTIVITIES TO STABILISATION IS A DURATION OF LESS THAN 6 MONTHS - THIS MEANS ACHIEVING A C-FACTOR OF LESS THAN 0.1 AND SETTING IN MOTION A PROGRAM THAT ENSURES THAT IT DROPS PERMANENTLY, (BY VEGETATION, PAVING, ARMOURING etc.) TO LESS THAN 0.05 WITHIN A FURTHER 60 DAYS. LOCAL WATER RESTRICTIONS PERMITTING, LANDS THAT HAVE BEEN NEWLY PLANTED WITH GRASS SPECIES SHALL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER HAS BEEN ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER SHALL BE APPLIED AS NECESSARY IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE VEGETATIVE PROTECTION. NOTWITHSTANDING THIS SCHEDULE WORKS SO THAT THE DURATION FROM THE CONCLUSION OF LAND SHAPING TO THE COMPLETION OF FINAL STABILISATION IS LESS THAN 20 WORKING DAYS.

19. SEDIMENT FENCES (SD) 6-7 SHALL:-

    a. BE INSTALLED WHERE SHOWN ON THE CC PLANS AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
    b. HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m, AND A STORAGE DEPTH OF AT LEAST 0.6m.
    c. PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHMENT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 40litres/sec IN A MAX. 20yr Tc DISCHARGE.

20. STOCKPILES (SD) 4-1 SHALL BE LOCATED AS SHOWN ON THE CC PLANS AND AT THE DISCRETION OF THE SITE SUPERINTENDENT.

21. DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDANTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.

22. NOTWITHSTANDING NOTE 21 STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.

23. THE SEDIMENT RETENTION BASINS (SD) 6-4 SHALL:-

    a. BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
    b. BE FLOCCULATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
    c. HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.

24. STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:-

    a. LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
    b. THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
    c. THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT
    d. DISCHARGING SEDIMENT FROM THE SITE.

25. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR.

26. WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD) 6-8 & 6-9.

27. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED.

28. ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

STOCKPILE NOTES:

1. SPOIL AN TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREAS WHERE WATER MAY CONCENTRATE.

2. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 14 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.

3. FOLLOWING CONSTRUCTION, TOPSOIL SHALL BE RESPREAD TO A MINIMUM DEPTH OF 100mm ON THE BARE SOIL SURFACES AND REVEGETATE.

4. PLASTIC SHEETING MUST BE PLACED OVER THE STOCKPILE TO MINIMISE WIND BLOWN DUST.

SEDIMENTATION CONTROL DEVICES:

1. ALL STRAW BALES SHALL BE BOUND WITH WIRE. STRAW BALES SHALL BE PLACED END TO END IN A SINGLE ROW AND EMBEDDED INTO THE SOIL TO A DEPTH OF 100mm. EACH BALE SHALL BE SECURELY ANCHORED WITH TWO STEEL STAKES DRIVEN 450mm INTO THE GROUND AND LOCKED ON THE BALE CENTRELINE.

2. SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG IT'S LOWER EDGE.

3. PROVIDE STRIP OF TURF MIN. 300mm WIDE BEHIND KERB + 1m WIDE AROUND ALL SURFACE INLET PITS

SITE INSPECTION AND MAINTENANCE:

1. A SELF-AUDITING PROGRAM SHALL BE ESTABLISHED BASED ON A CHECK SHEET. A SITE INSPECTION USING THE CHECK SHEET SHALL BE MADE BY THE SITE MANAGER-:

    a. AT LEAST WEEKLY
    b. IMMEDIATELY BEFORE SITE CLOSURE
    c. IMMEDIATELY FOLLOWING RAINFALL EVENTS IN EXCESS OF 5mm IN ANY 24hr PERIOD.

    THE SELF AUDIT SHALL INCLUDE:-

    a. RECORDING THE CONDITION OF EVERY 'BEST MANAGEMENT PRACTICE' EMPLOYED
    b. RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH 'BEST MANAGEMENT PRACTICE'
    c. RECORDING THE VOLUMES OF SEDIMENT REMOVED FROM SEDIMENT RETENTION SYSTEMS WHERE APPLICABLE
    d. RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
    e. FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER FOR THEIR INFORMATION.

2. IN ADDITION A SUITABLY QUALIFIED PERSON SHALL BE RESPONSIBLE FOR OVERSEEING THE INSTALLATION AND MAINTENANCE OF ALL SOIL AND WATER MANAGEMENT WORKS ON THE SITE. THE PERSON SHALL BE REQUIRED TO SPEND A MINIMUM OF:-

    a. 2hrs ONSITE EACH FORTNIGHT UP UNTIL COMPLETION OF ROAD AND DRAINAGE WORKS AND/OR THE COMMISSIONING OF SEDIMENT BASIN(S)/WATER QUALITY CONTROL FACILITIES, AND DURING THE DECOMMISSIONING OF SAME AND/OR FINAL SITE STABILISATION. TO PROVIDE A SHORT MONTHLY WRITTEN REPORT.
    b. ONE HOUR ONSITE EACH 2 MONTHS DURING THAT PHASE WHERE THE DEVELOPERS RESPONSIBILITIES ARE LIMITED TO MAINTENANCE OF THE SDS DEVICES AND/OR SEDIMENT BASINS (ie DURING THE STAGE WHEN BUILDING WORKS CAN BE UNDERTAKEN) TO PROVIDE A SHORT WRITTEN REPORT EACH 4 MONTHS

    THE RESPONSIBLE PERSON SHALL ENSURE THAT:-

    a. THIS PLAN IS BEING IMPLEMENTED CORRECTLY
    b. REPAIRS ARE BEING UNDERTAKEN AS REQUIRED
    c. ESSENTIAL MODIFICATIONS TO THIS PLAN ARE BEING MADE IF AND WHEN NECESSARY EACH REPORT SHALL CERTIFY THAT WORKS HAVE BEEN CARRIED OUT ACCORDING TO THE APPROVED PLANS.

3. WASTE BINS SHALL BE EMPTIED AS NECESSARY, DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT

4. PROPER DRAINAGE OF THE SITE SHALL BE MAINTAINED. TO THIS END DRAINS (INCLUDING INLET AND OUTLET WORKS) SHALL BE CHECKED TO ENSURE THAT THEY ARE OPERATING AS INTENDED,ESPECIALLY THAT:-

    a. NO LOW POINTS EXIST WHICH CAN OVERTOP IN A LARGE STORM EVENT.
    b. AREAS OF EROSION ARE REPAIRED (e.g LINED WITH SUITABLE MATERIAL) AND/OR VELOCITY OF FLOW IS REDUCED APPROPRIATELY THROUGH CONSTRUCTION OF SMALL CHECK DAMS OR INSTALLING ADDITIONAL DIVERSIONS UPSLOPE
    c. BLOCKAGES ARE CLEARED (THESE MIGHT OCCUR BECAUSE OF SEDIMENT POLLUTION, SAND/SOIL/SPOIL BEING DEPOSITED IN OR TOO CLOSE TO THEM, BREACHED BY VEHICLE WHEELS etc)

5. SAND/SOIL/SPOIL MATERIALS PLACED CLOSER THAN 2m FROM HAZARD AREAS SHALL BE REMOVED SUCH HAZARD AREAS INCLUDE ANY AREAS OF HIGH VELOCITY WATER FLOWS (eg WATERWAYS AND GUTTERS) PAVED AREAS AND DRIVEWAYS.

6. RECENTLY STABILISED LANDS SHALL BE CHECKED TO ENSURE THAT THE EROSION HAZARD HAS BEEN EFFECTIVELY REDUCED. ANY REPAIRS SHALL BE INITIATED AS APPROPRIATE.

7. EXCESSIVE VEGETATIVE GROWTH SHALL BE CONTROLLED THROUGH MOWING OR SLASHING.

8. ALL SEDIMENT DETENTION SYSTEMS SHALL BE KEPT IN GOOD WORKING CONDITION. IN PARTICULAR ATTENTION SHALL BE GIVEN TO:-

    a. RECENT WORKS TO ENSURE THAT THEY HAVE NOT RESULTED IN DIVERSION OF SEDIMENT LADEN WATER AWAY FROM THEM.
    b. DEGRADABLE PRODUCTS TO ENSURE THAT THEY ARE REPLACED AS REQUIRED
    c. SEDIMENT REMOVAL TO ENSURE THE DESIGN CAPACITY OR LESS REMAINS IN THE SETTLING ZONE.

9. ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS SHALL BE CONSTRUCTED AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS (ie MAKE ONGOING CHANGES TO THIS PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS AT THE WORKS SITE OR ELSEWHERE IN THE CATCHMENT.

10. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN A FUNCTIONING CONDITION UNTIL ALL EARTHWORKS ACTIVITIES ARE COMPLETED AND THE SITE STABILISED.

11. WATERS IN SEDIMENT RETENTION BASIN(S) THAT OCCUPY MORE THAN 1/4 OF THE DESIGN CAPACITY DURING THAT STAGE OF THE WORKS UP UNTIL COMMISSIONING OF THE BASIN(s) SHALL BE:-

    a. TREATED WITH A FLOCCULATING AGENT (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.)
    b. DISCHARGED WITHIN 5 days FROM THE CONCLUSION OF ANY STORM EVENT LARGE ENOUGH TO FILL THE BASIN TO THAT LEVEL.

12. LITTER, DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM THE GROSS POLLUTANT TRAPS AND TRASH RACKS AS REQUIRED.

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ELARA SECTION 94 DETAILED CONCEPT PLANS BY J. WYNDHAM PRINCE 11035005/DC01 - 72 AND THE LANDSCAPE PLANS BY PATERSON DESIGN STUDIO.

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

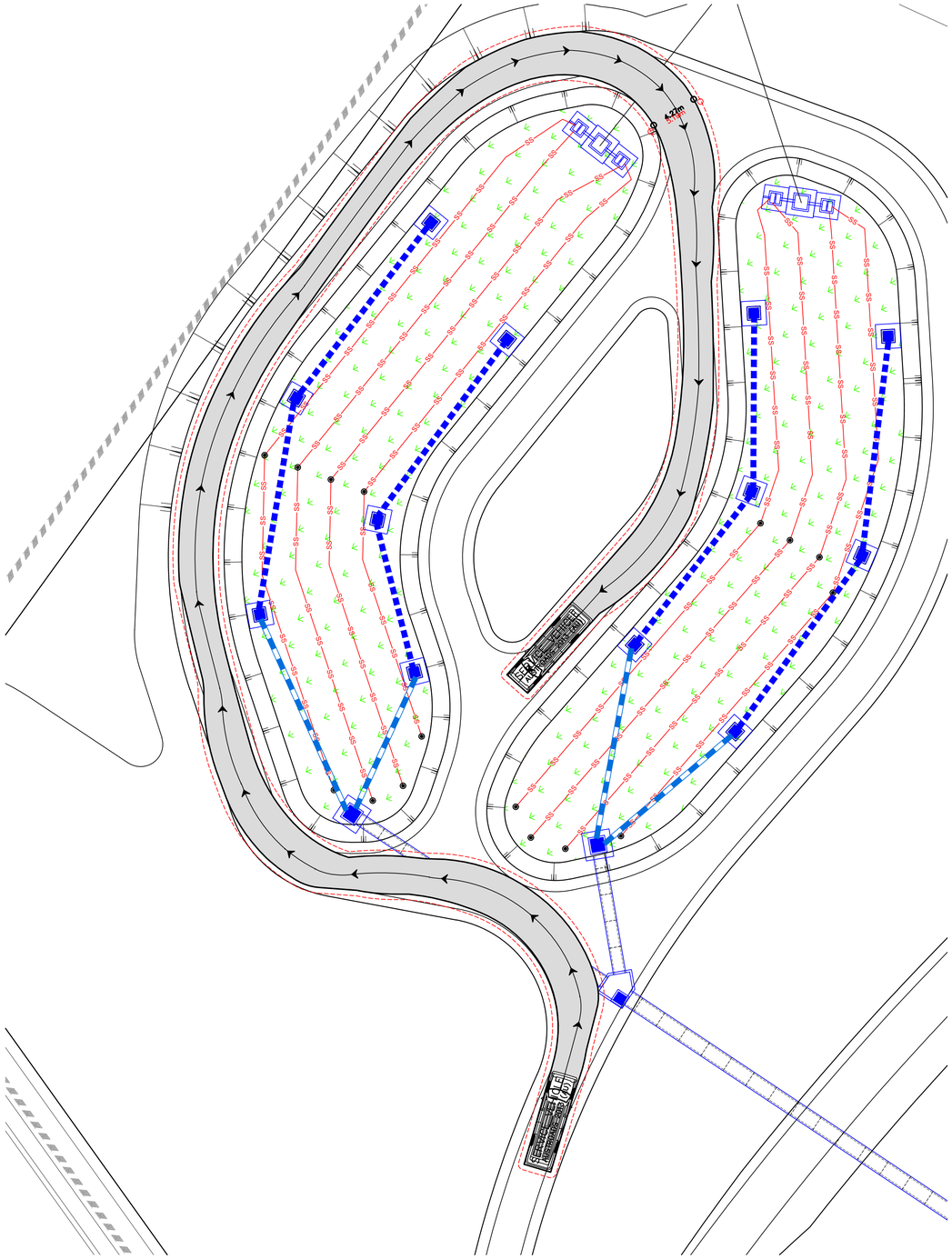
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

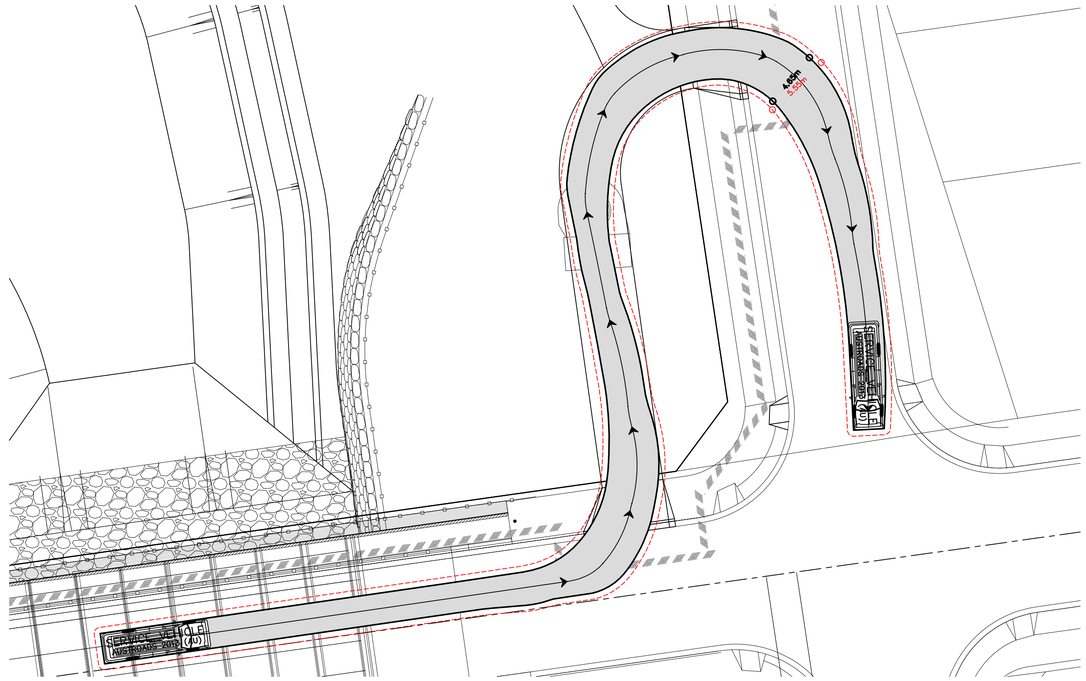
ISSUED FOR CONSTRUCTION APPROVAL

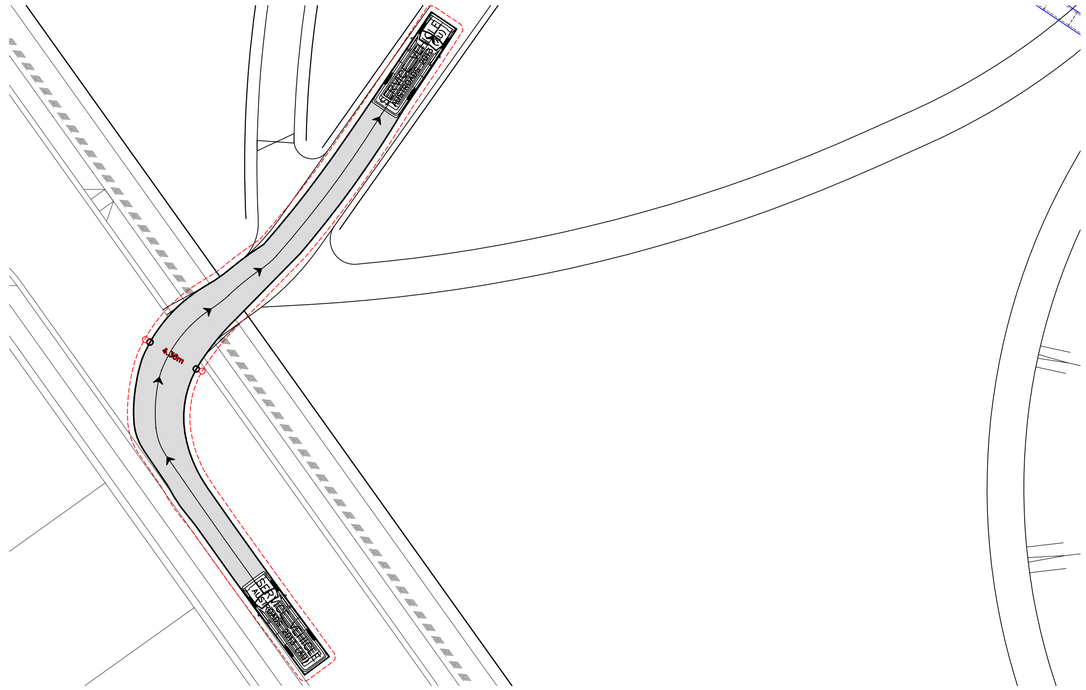
ELARA S7.11 WORKS
BASIN 3
SOIL & WATER MANAGEMENT NOTES

PLAN No: 11035005/CC451 A
FILE No: 11035005CC451
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 5:00:46 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC451.dwg







TURNING PATH BASED ON 8.8m SERVICE VEHICLE WITH 12.5m TURNING RADIUS.

1:250 (AT A1)
1:500 (AT A3)

5 0 5 10 15 20 25
METRES

A	ISSUED FOR CONSTRUCTION CERTIFICATE APPROVAL	PAS	UF	AM	MS	15/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT:
Stockland

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ISSUED FOR CONSTRUCTION APPROVAL

ELARA S7.11 WORKS
BASIN 3
TURNING PATHS

PLAN No: 11035005/CC452 A
FILE No: 11035005CC452
SHEET SIZE: A1 ORIGINAL

Plotted: 15 November , 2018 5:01:09 PM File Name: J:\110350 - Elara - Marsden Park\05 - S94 Works\CD\CC\01_Basin 3\11035005CC452.dwg

ELARA P5 PARKLANDS: REACH 1

LANDSCAPE WORKS
CONSTRUCTION CERTIFICATE

Landscape Drawing List

Drawing No.	Title
LA-100	COVER SHEET & CONTEXT PLAN
LA-101	SHEET REFERENCE PLAN
LA-102	LEGEND
LA-103	PLANT SCHEDULES
	LANDSCAPE PLAN
LA-200	LANDSCAPE PLAN
	ENLARGEMENTS
LA-300	POCKET PARKS
	DETAILS
LA-400	SITE FURNITURE
LA-410	HARDSCAPE
LA-430	PLANTING DETAILS
LA-431	TREE PLANTING DETAILS
LA-432	CREEK PLANTING DETAILS
LA-440	WALLS & STAIRS
LA-450	HANDRAIL & GATE DETAILS
	SPECIFICATIONS
LA-500	LANDSCAPE SPECIFICATIONS

N

1 CONTEXT PLAN
NTS

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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Any discrepancies shall be referred to the Superintendent for a written decision prior to ordering/ supply/ installation/ construction.

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
COVER SHEET & CONTEXT PLAN

ISSUE FOR CC
PROJECT NO. -

SCALE NA

DRAWING NO. LA-100
REVISION -

1 SHEET REFERENCE PLAN

NTS

Paterson Design Studio

Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)

Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.

T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

Stockland

PROJECT

ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE

SHEET REFERNCE PLAN

ISSUE
FOR CC

PROJECT NO.
-

SCALE
NA

N

DRAWING NO.
LA-101

REVISION
-

LEGEND

EXTENT OF WORKS

JOINLINE

100 YEAR FLOOD LEVEL

EDGES

E1	CONCRETE EDGE	2 / LA410
E2	TREATED PINE EDGE	2 / 430 · 3 / 431
RB	ROOT BARRIER	4 / LA410

WALLS & STAIRS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO / DWG
W3	CONCRETE CHEEK WALL REFER DETAIL & SPEC	NO / DWG
	STAIRS Arrow indicates up	

OTHER STRUCTURES

	BOULDERS REFER CIVIL	
	INFORMAL SANDSTONE LOG CROSSINGS	1 / 440
	ANCHORED HABITAT TREE LOG	3 / 432
GPT	GPT REFER CIVIL DWG	

FINISHES

Refer to Schedule of Landscape Works

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 / LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 / LA410
P3	GRAVEL PAVING	3 / LA410
P4	BOARDWALK DECKING BY OTHERS Refer structural dwg	

PLANTING

Refer to Schedule of Landscape Works

+	PROPOSED TREE PER SCHEDULE	1,2,3 / 431
1	TURF PER SCHEDULE	1 / 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 / 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
5	DAM PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
6	RAINGARDEN PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

GRADING

Refer to Schedule of Landscape Works

EX 0.000	EXISTING LEVEL
0.000	FINISHED SURFACE LEVEL
TW 0.000	TOP OF WALL LEVEL
BW 0.000	BOTTOM OF WALL LEVEL
TK 0.000	TOP OF KERB LEVEL
	RAMP arrow indicates up
FALL 1:20	DIRECTION AND GRADIENT of surface fall
2.0%	CROSS FALL
	BATTER

FURNITURE

Refer to Schedule of Landscape Works

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 / LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 / LA400
F3	F3 - BIKE RACK Manufacturer: HUB Product: BCC - PARK SUIT	8 / LA400
F4	F4 - FURNITURE TYPE 4 BBQ	
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 / LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 / LA400
F8	F8 - INFORMAL SEATING LOG SUPPLIED & INSTALLED BY OTHERS	

BOLLARDS

B1	B1 - FIXED BOLLARD	1 / LA400
B2	B2 - REMOVABLE BOLLARD	1 / LA400
B3	B3 - FIXED BOLLARD IN VERGE	2,3 / LA400

HANDRAILS & BALUSTRADES

	H1 - HANDRAIL	1 / LA4XX
	H2 - BALUSTRADE	3 / LA4XX

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 / LA4XX

EXERCISE EQUIPMENT

E1	E1 - COMBI 2 Manufacturer: KOMPAN Product: FSW10200-0901
E2	E2 - PARALLEL BARS Manufacturer: KOMPAN Product: FSW20100-0901
E3	E3 - MAGNETIC BELLS Manufacturer: KOMPAN Product: FAZ10200-0900
E4	E4 - STEP 20CM Manufacturer: KOMPAN Product: FAZ30100-0900
E5	E5 - STEP 40CM Manufacturer: KOMPAN Product: FAZ30200-0900
E6	E6 - STEP 60CM Manufacturer: KOMPAN Product: FAZ30300-0900
E7	E7 - SUSPENSION TRAINER Manufacturer: KOMPAN Product: FAZ10100
E8	E8 - COMBI 1 Manufacturer: KOMPAN Product: FSW10100

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Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)

Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.

T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
LEGEND

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-102

REVISION
-

STREET TREES IN VERGE							
CODE	**BOTANTICAL NAME**	**POT SIZE**	**DENSITY**	**HEIGHT**	**CALIPER**	**STAKING**	**TOTAL**
Ang flo	Angophora floribunda	100L	As Shown	2.50	40mm	2x50x50x1800mm KDHW posts	**59**

TREES IN PARKLAND							
CODE	**BOTANTICAL NAME**	**POT SIZE**	**DENSITY**	**HEIGHT**	**CALIPER**	**STAKING**	**TOTAL**
Ang sub	*Angophora subvelutina*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**13**
Euc amp	*Eucalyptus amplifolia*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**15**
Euc bot	*Eucalyptus botryoides*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**6**
Euc cre	*Eucalyptus crebra*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**16**
Euc eug	*Eucalyptus eugenioides*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**3**
Euc pun	*Eucalyptus punctata*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**7**
Euc ter	*Eucalyptus tereticornis*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**4**
Mel sty	*Melaleuca styphelioides*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**6**

POCKET PARK PLANT LISTS

TREES							
CODE	**BOTANTICAL NAME**	**POT SIZE**	**DENSITY**	**HEIGHT**	**CALIPER**	**STAKING**	**TOTAL**
Ang sub	*Angophora subvelutina*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	**1**
Bra ace	*Brachychiton acerifolius*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	**3**
Buc cel	*Buchinghamia celissima*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	**3**
Cup ana	*Cupaniopsis anacardioides*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	**2**
Mel dec	*Melaleuca decora*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	**3**
Mel sty	*Melaleuca styphelioides*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	**3**

TUFTED GRASSES							
CODE	**BOTANTICAL NAME**	**POT SIZE**	**DENSITY**	**HEIGHT**	**CALIPER**	**STAKING**	**TOTAL**
Jun usi	*Juncus usitatua*	Hiko/tube	6 per M2	n/a	n/a	n/a	**61**
Dia rev	*Dianella revoluta*	Hiko/tube	6 per M2	n/a	n/a	n/a	**41**
Poa lab	*Poa labillardieri*	Hiko/tube	6 per M2	n/a	n/a	n/a	**58**
Carr app	*Carex appressa*	Hiko/tube	6 per M2	n/a	n/a	n/a	**44**
The aus	*Themeda australis*	Hiko/tube	6 per M2	n/a	n/a	n/a	**39**
Iso nod	*Isolepis nodosa*	Hiko/tube	6 per M2	n/a	n/a	n/a	**43**
Lom tan	*Lomandra tanika*	Hiko/tube	6 per M2	n/a	n/a	n/a	**38**

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

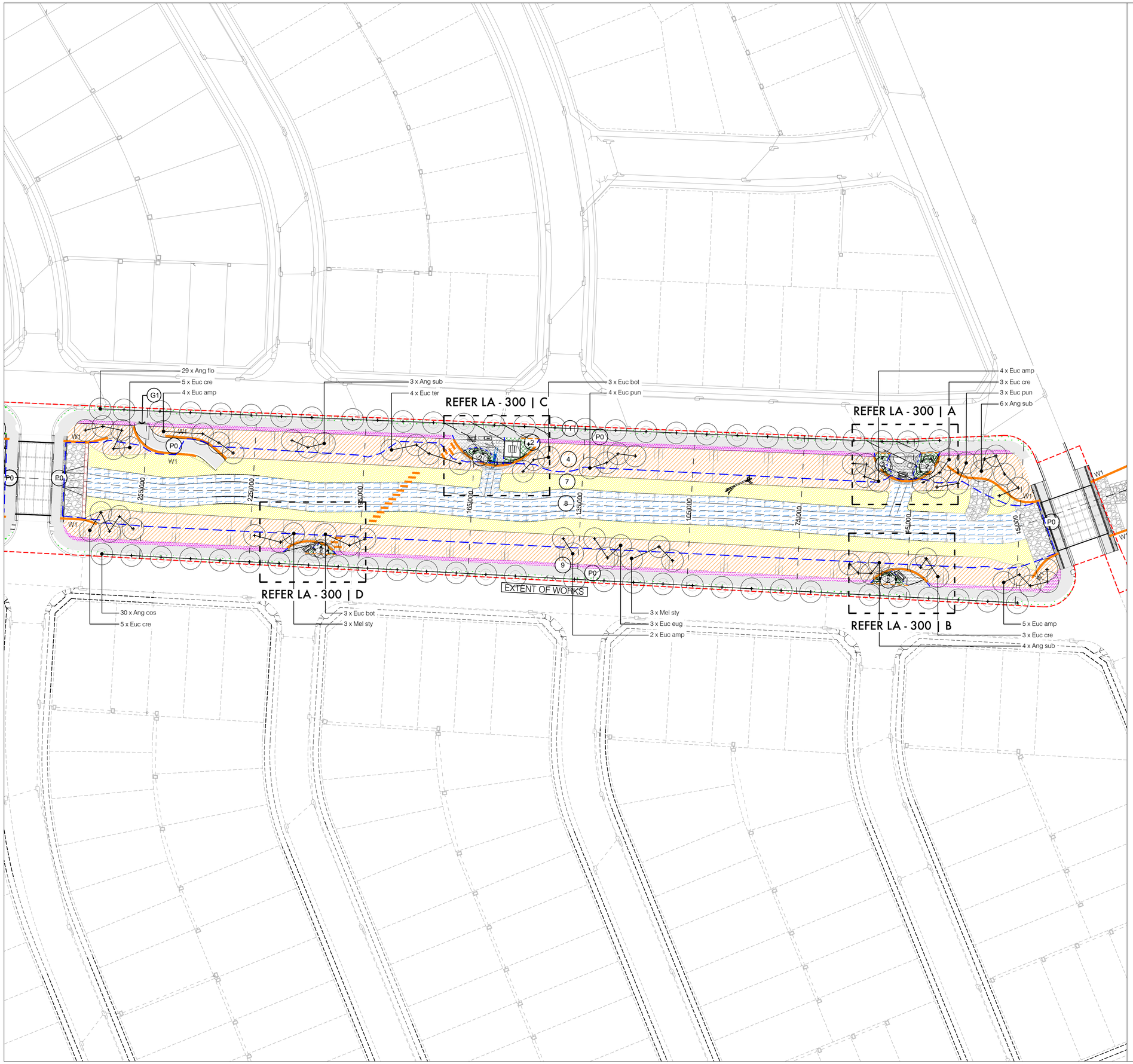
CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
PLANT SCHEDULES

ISSUE FOR CC
PROJECT NO. -
SCALE

DRAWING NO. LA-103
REVISION -



LEGEND

EXTENT OF WORKS

JOINLINE

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 / LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 / LA410
P3	GRAVEL PAVING	3 / LA410

EDGES

E1	CONCRETE EDGE	2 / LA410
E2	TREATED PINE EDGE	2 / 430
RB	ROOT BARRIER	4 / LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	

OTHER STRUCTURES

	BOULDERS REFER CIVIL	
	INFORMAL SANDSTONE LOG CROSSINGS	1 / 440
	ANCHORED HABITAT TREE LOG	3 / 432
GPT	GPT REFER CIVIL DWG	

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 / 431
1	TURF PER SCHEDULE	1 / 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 / 430
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 / LA4XX

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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

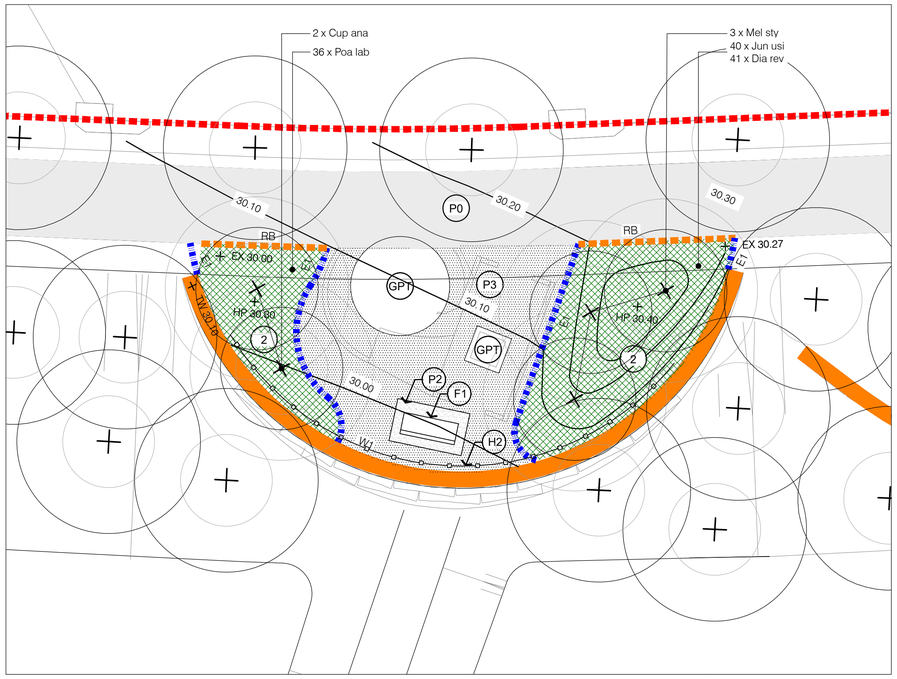
PROJECT
ELARA P5 PARKLANDS REACH 1

DRAWING TITLE
LANDSCAPE PLAN

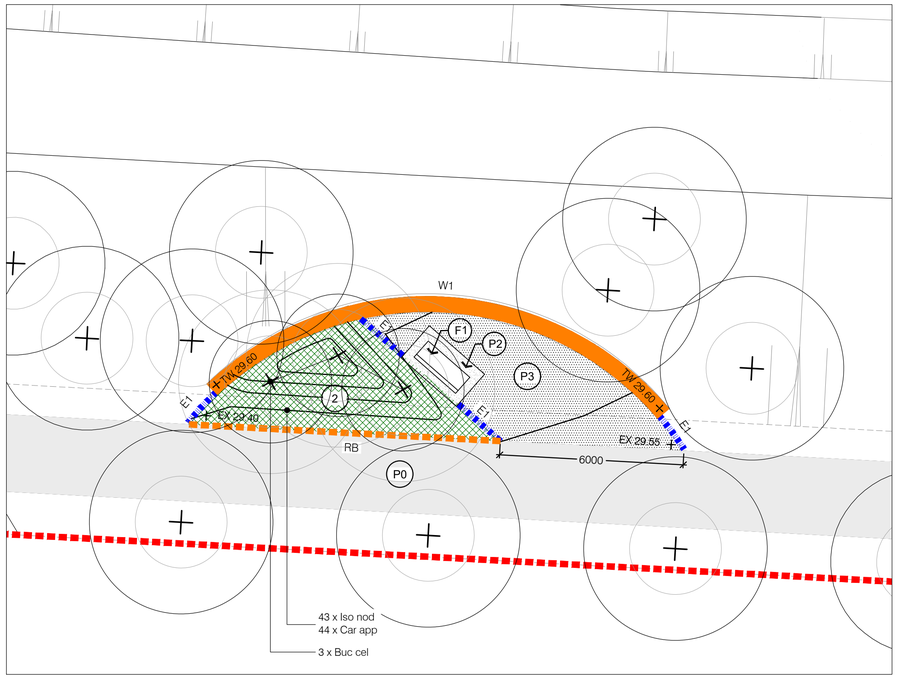
ISSUE: FOR CC
PROJECT NO.: -

SCALE: 1:500 @ A1 1:1000 @ A3
0 5 10 15 20 25[m]
N

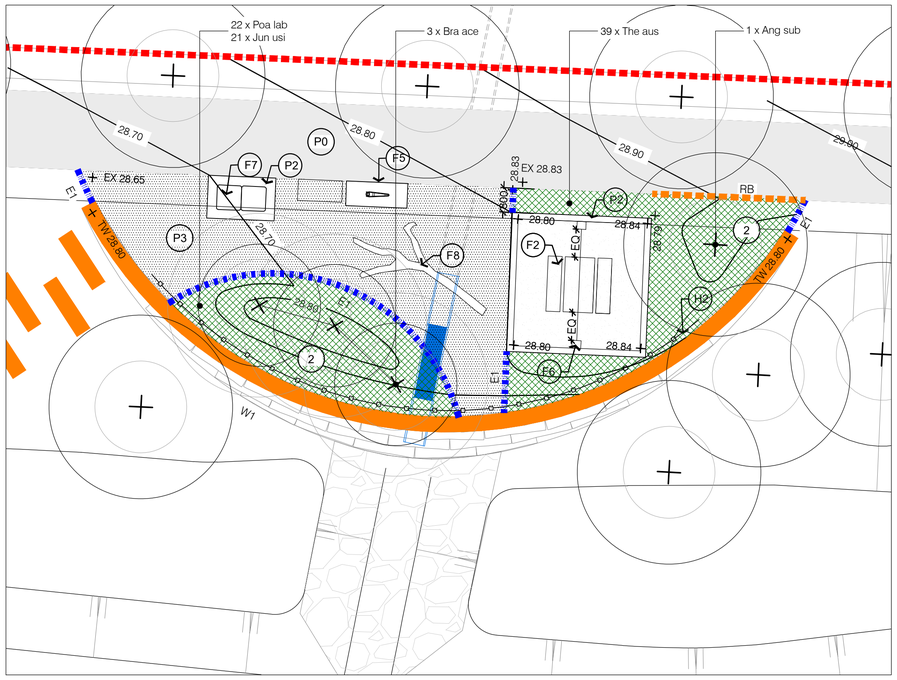
DRAWING NO.: LA-200
REVISION: -



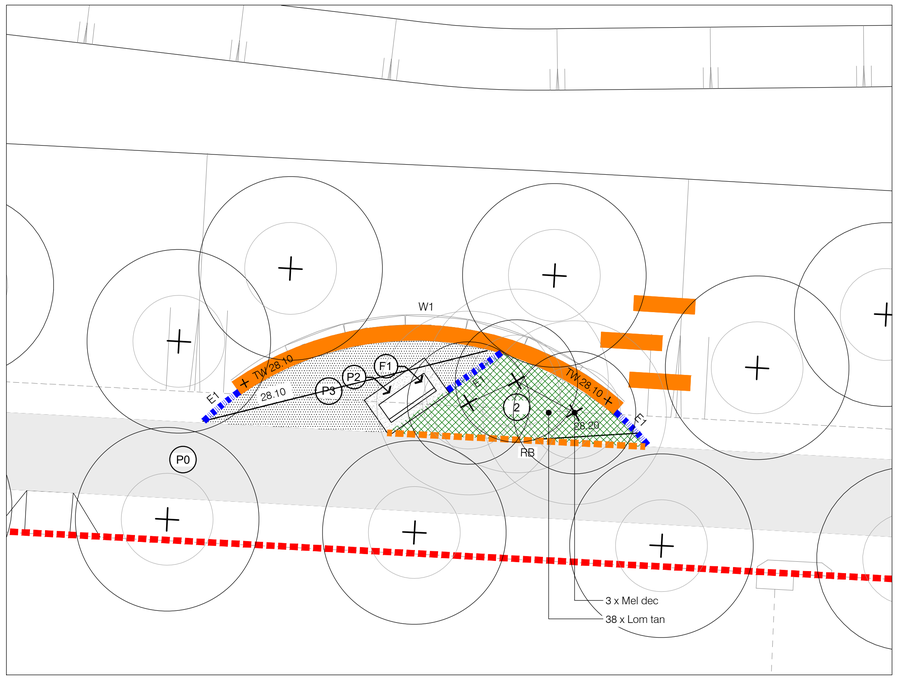
ENLARGEMENT AREA A - POCKET PARK
SCALE 1:100 @ A1



ENLARGEMENT AREA B - POCKET PARK
SCALE 1:100 @ A1



ENLARGEMENT AREA C - POCKET PARK
SCALE 1:100 @ A1



ENLARGEMENT AREA D - POCKET PARK
SCALE 1:100 @ A1

LEGEND

EXTENT OF WORKS

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 / LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 / LA410
P3	GRAVEL PAVING	3 / LA410

EDGES

E1	CONCRETE EDGE	2 / LA410
E2	TREATED PINE EDGE	2 / 430
RB	ROOT BARRIER	4 / LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	

OTHER STRUCTURES

	BOULDERS REFER CIVIL	
	INFORMAL SANDSTONE LOG CROSSINGS	1 / 440
GPT	GPT REFER CIVIL DWG	

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 / 431
2	PARKLAND MASS PLANTING PER SCHEDULE	2 / 430

FURNITURE

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 / LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 / LA400
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 / LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 / LA400
F8	F8 - INFORMAL SEATING LOG SUPPLIED & INSTALLED BY OTHERS	

HANDRAILS & BALUSTRADES

	H2 - BALUSTRADE	3 / LA4XX

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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
ENLARGEMENT AREAS

ISSUE
FOR CC

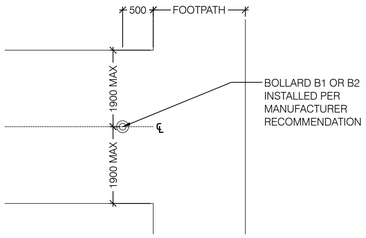
PROJECT NO.
-

SCALE
1:100 @ A1 1:200 @ A3
0 1 2 3 4 5[m]

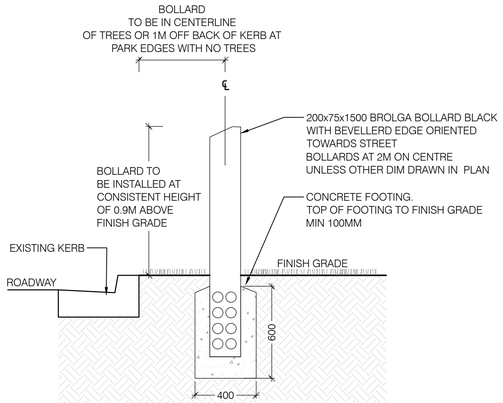
N

DRAWING NO.
LA-300

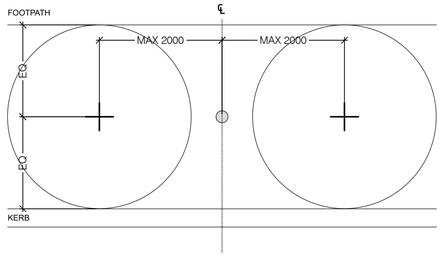
REVISION
-



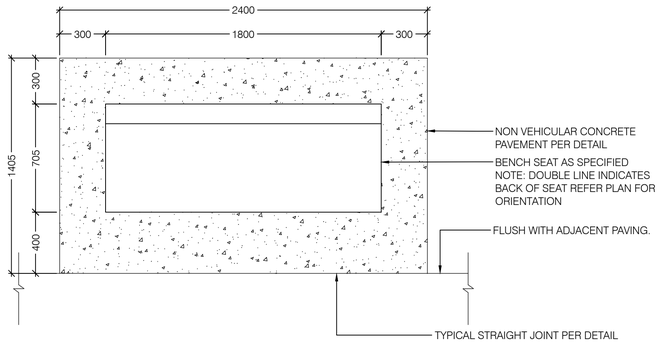
1 B1 / B2 - TYPICAL REMOVABLE BOLLARD LAYOUT DETAIL
1:50



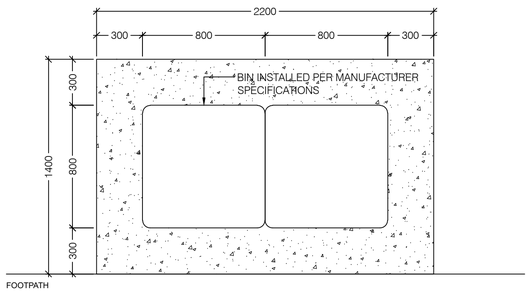
2 B3 - FIXED BOLLARD IN VERGE
1:20



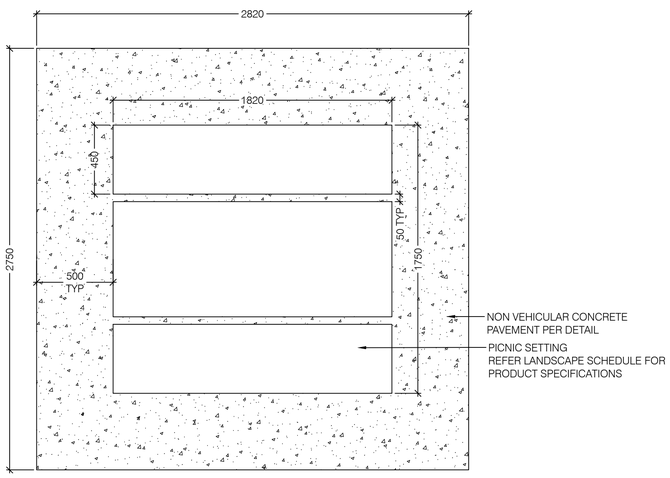
3 B3 - FIXED BOLLARD IN VERGE LAYOUT
1:50



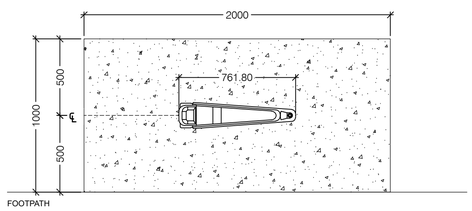
4 F1 - TYPICAL BENCH LAYOUT ON CONCRETE PAD
1:20



5 F7 - TYPICAL BIN LAYOUT ON CONCRETE PAD
1:20



6 LAYOUT OF PICNIC SETTING ON CONCRETE PAD
1:20



7 F5 - TYPICAL DRINKING FOUNTAIN ON CONCRETE PAD
1:20

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& PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
SITE FURNITURE

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-400

REVISION
-

JOINT SEALANT:
10MM WIDE X 15MM DEEP EXPANDITE 'THIOFLEX 600' JOINT SEALANT RECESSED WITH POLYETHYLENE TAPE BOND BREAKER OR APPROVED EQUIVALENT, PLACE TAPE AFTER IDES OF RECESS HAVE BEEN PRIMED FOR SEALANT.

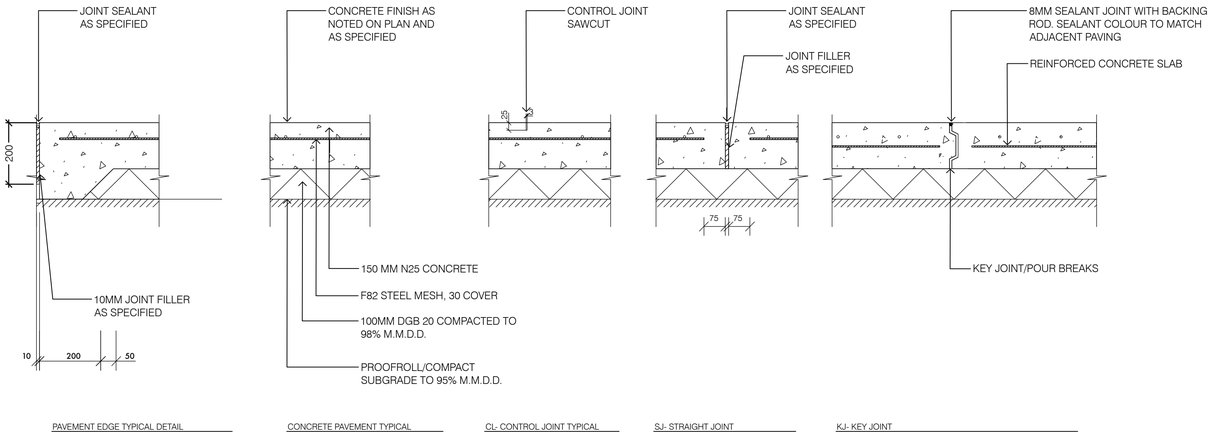
JOINT FILLER:
10MM THICK EXPANDITE 'FLEXCELL' COMPRESSIBLE FILLER BOARD, OR APPROVED EQUIVALENT.

NOTE:
CONCRETE AS PER BCC PATH PAVING POLICY AND BCC ENGINEERING GUIDE FOR DEVELOPMENT 2005 WORKS SPECIFICATION

NOTE:
ENSURE DGB BASE IS SET 150MM BELOW JOINT LOCATION TO ENSURE THAT THERE ARE NO GAPS BETWEEN BOTTOM OF JOINT AND DGB LAYER

THICKNESS AND COLOUR OF TYPICAL PAVEMENT				
PAVEMENT	MM	COLOUR	FINISH	REINFORCEMENT
P1	125	GREY	BROOM	F82 STEEL MESH
P2	125	GREY	BROOM	N/A

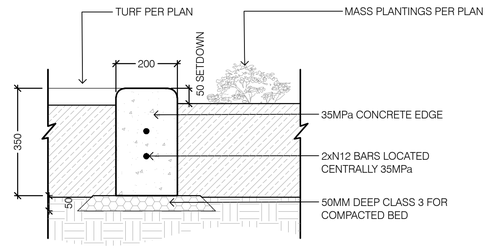
TYPICAL JOINT SPACING (unless other noted in plans)			
With of Path	KJ	SJ	JC
3.0m	6.1m	18.1m	3.05m
2.5m	6.1m	18.1m	3.05m
1.2m	3.0m	12.0m	1.5m



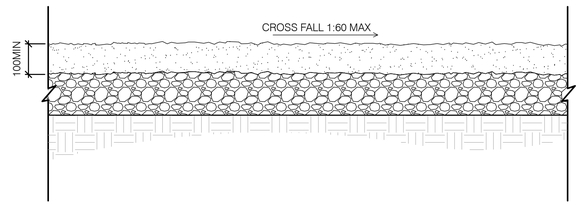
PAVEMENT EDGE TYPICAL DETAIL | CONCRETE PAVEMENT TYPICAL | CL- CONTROL JOINT TYPICAL | SJ- STRAIGHT JOINT | KJ- KEY JOINT

1 P1 & P2 CONCRETE PAVEMENT
1:10

NOTE: PROVIDE TOOLED JOINT AT 1M CENTRES TO 5mm DEPTH. EDGES CHAMFERED
CONCRETE COLOUR TO MATCH ADJACENT PATHWAYS.

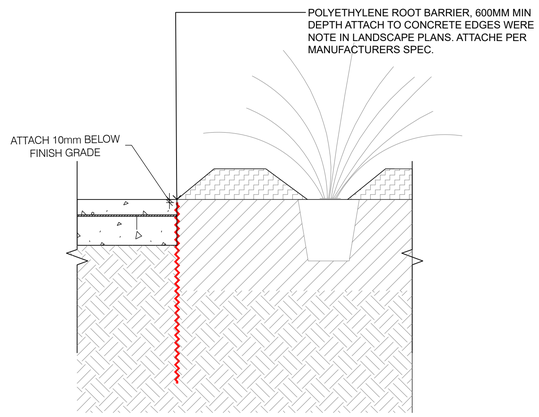


2 CONCRETE EDGER
1:10



NOTES
1) MIX 20:1 SELECTED NATURAL TONE SANDSTONE GRAVEL:CEMENT. CEMENT: TYPE GP TP AS 3972.
2) GRAVEL GRADING: MAXIMUM PARTICLE IZE 10mm, 30 - 40% PASSING 5mm SIEVE, OF UNIFORM COLOUR AND LOW PLASTICITY.
3) GRAVEL SOURCE AND COLOUR; BUFF ASS SUPPLIED BY ANL R APPROVED EQUIVALENT.
4) COMPACTION; COMPACT TO ACHIEVE A DRY DENSITY RATIO OF 95% WHEN TESTED TO AS 1289.5.4.1 (STANDART COMPACTION).

3 CRUSHED SANDSTONE GRAVEL PAVEMENT
1:10



4 STREET TREE IN VERGE
1:10

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CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
HARDSCAPE

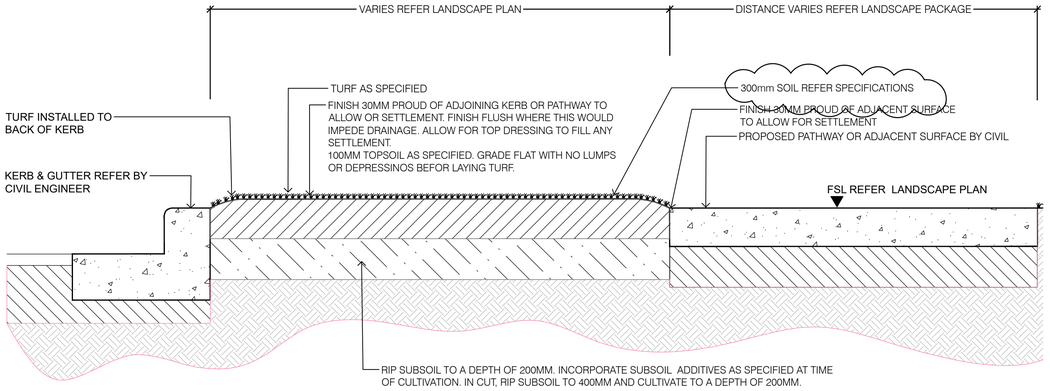
ISSUE
FOR CC

PROJECT NO.
-

SCALE

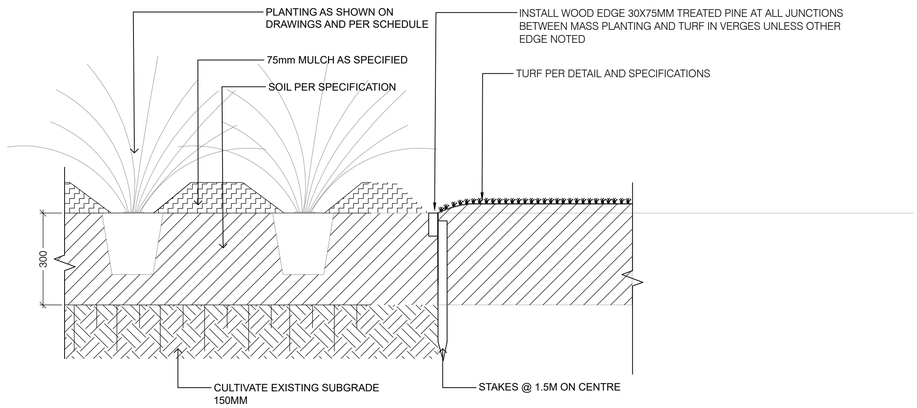
DRAWING NO.
LA-410

REVISION
-



NOTE:
ENSURE GROUND IS FREE FROM ANY CONTAMINATED MATERIALS DETRIMENTAL TO PLANT GROWTH.
PREVENT COMPACTION BY CONSTRUCTION PLANT.
COMPACT LIGHTLY AND UNIFORMLY IN 100MM LAYERS. TO PROVIDE A FINISHED SURFACE AT DESIGN LEVELS. SMOOTH AND FREE OF STONES OR LUMPS OF SOIL AND GRADED TO DRAIN FREELY WITHOUT PONDING TO CATCHMENT POINTS.

1 SITE PREPARATION TURF
1:10



2 MULCHED MASS PLANTING
1:10

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
SOFTSCAPE
PLANTING DETAILS

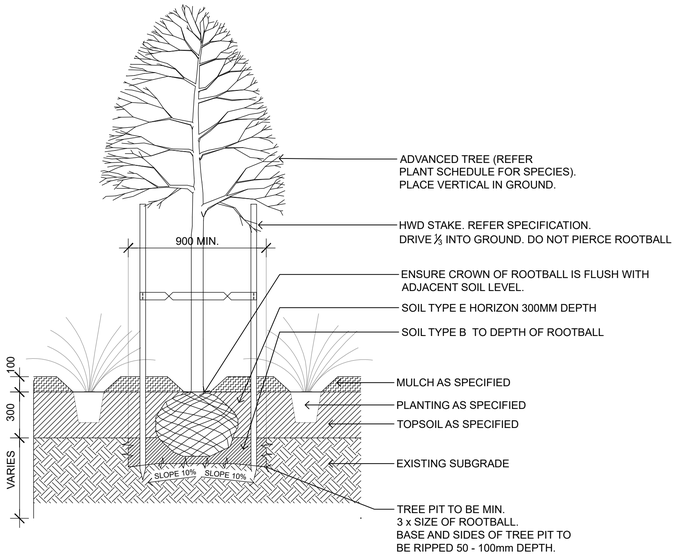
ISSUE
FOR CC

PROJECT NO.
-

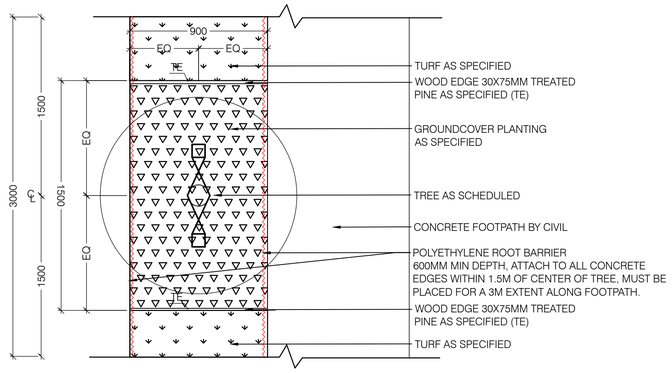
SCALE

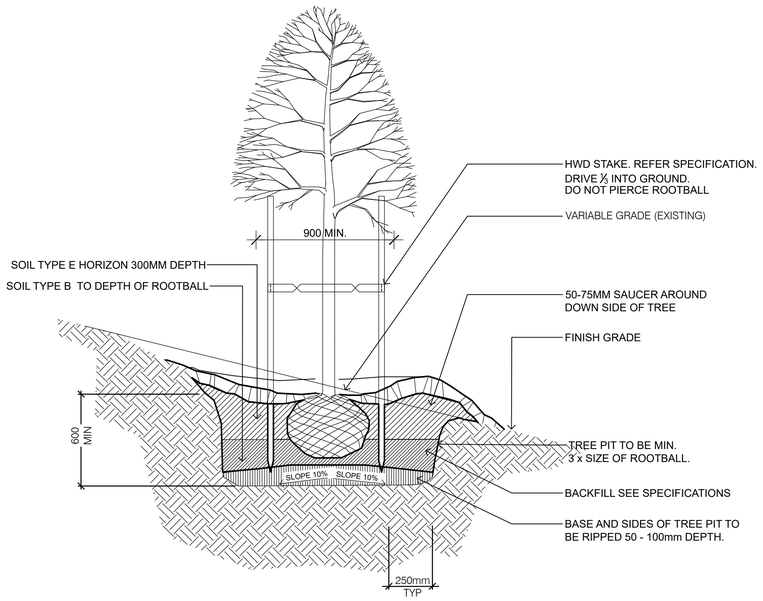
DRAWING NO.
LA 430

REVISION
-

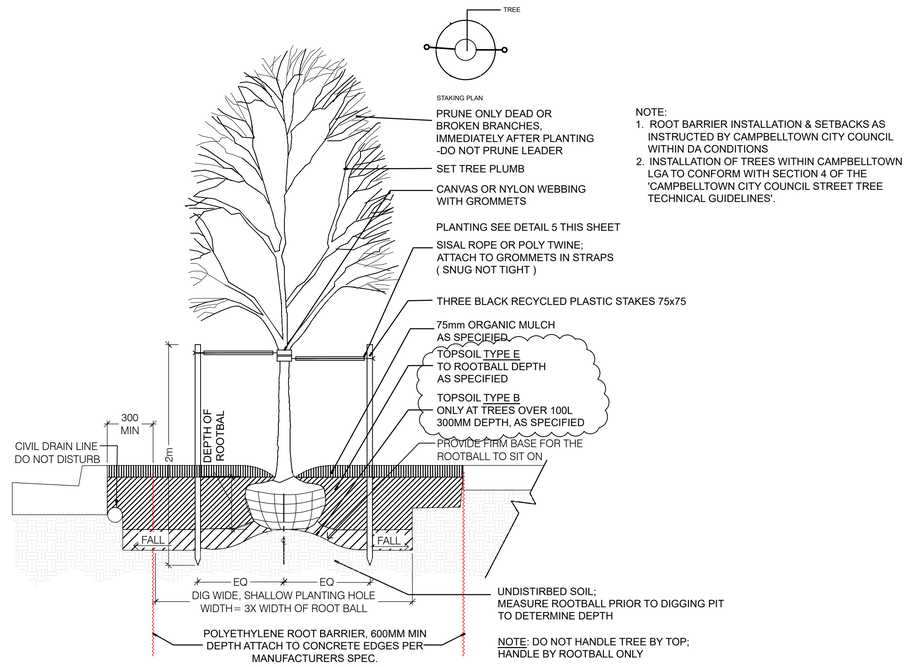


1 TREE IN MASSED PLANTING
1:20





2 TREE IN BATTER
1:20



NOTE:
1. ROOT BARRIER INSTALLATION & SETBACKS AS INSTRUCTED BY CAMPBELLTOWN CITY COUNCIL WITHIN DA CONDITIONS
2. INSTALLATION OF TREES WITHIN CAMPBELLTOWN LGA TO CONFORM WITH SECTION 4 OF THE 'CAMPBELLTOWN CITY COUNCIL STREET TREE TECHNICAL GUIDELINES'.

3 STREET TREE IN VERGE
1:20

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CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS REACH 1

DRAWING TITLE
SOFTSCAPE
TREE PLANTING DETAILS

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA 431

REVISION
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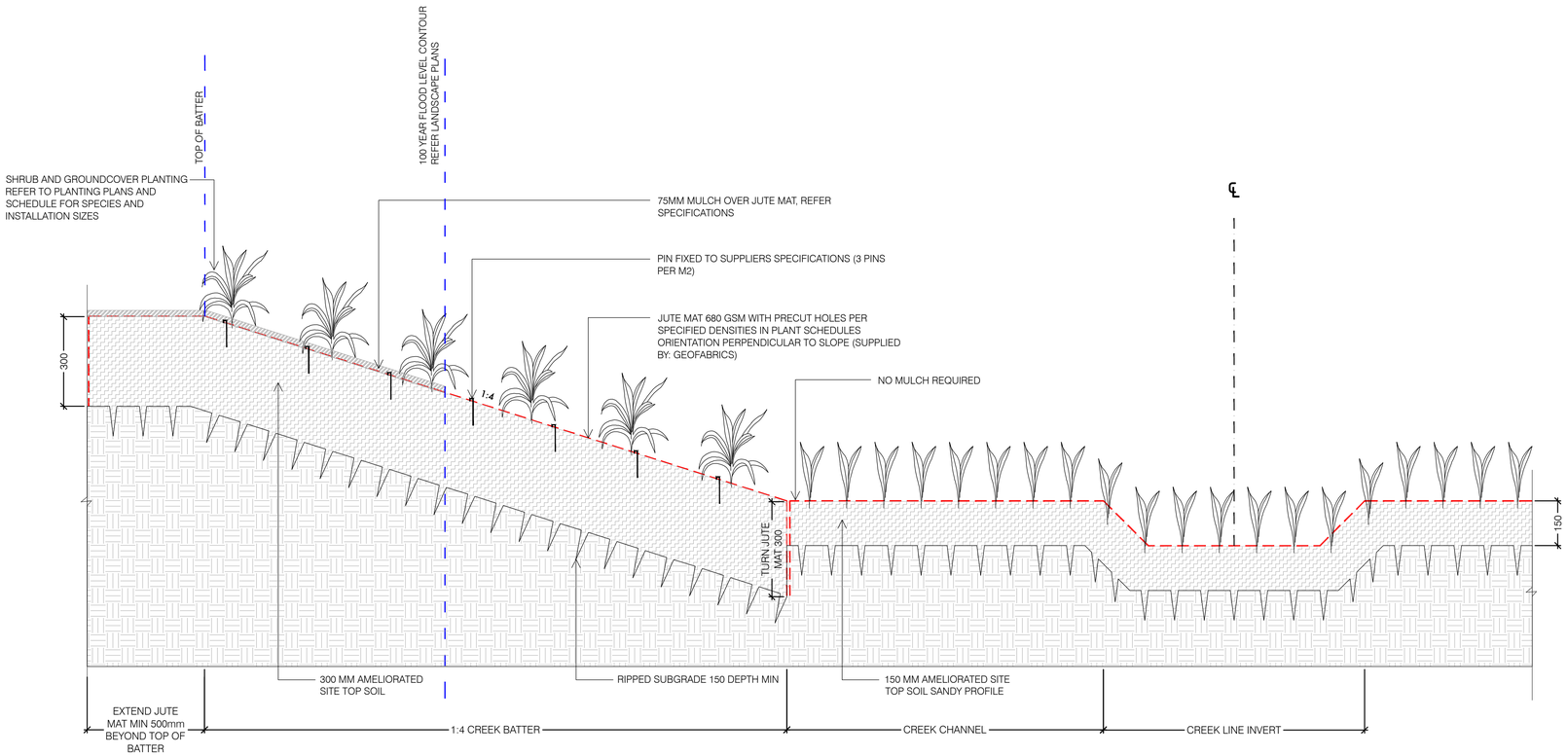
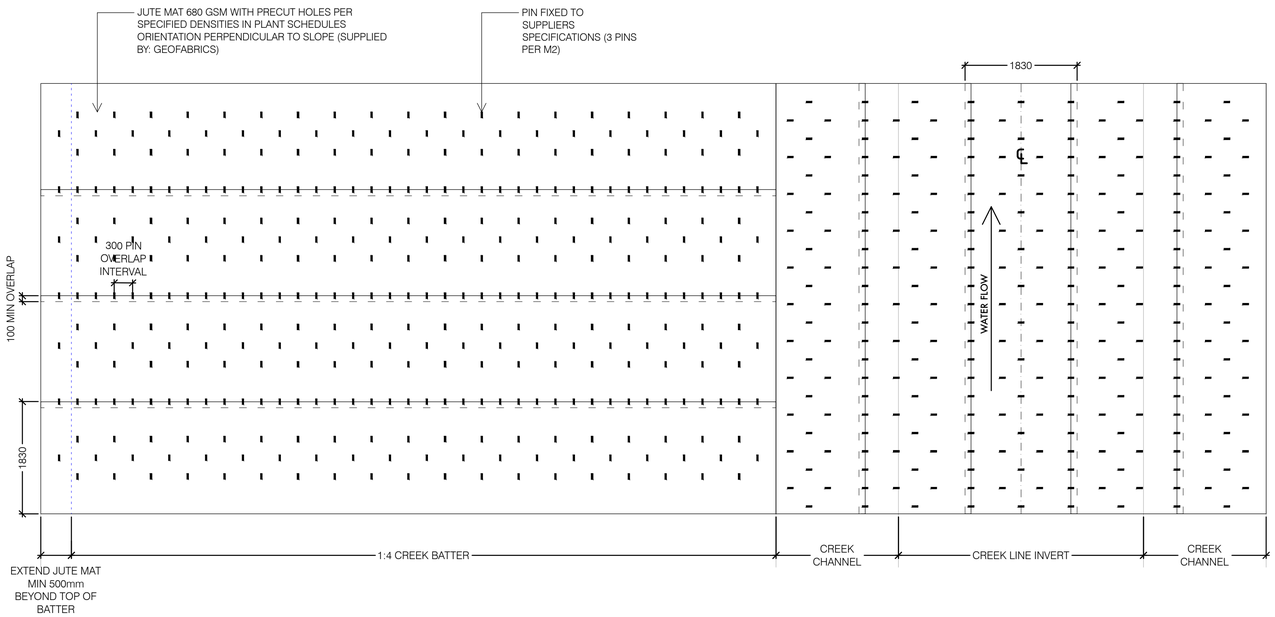
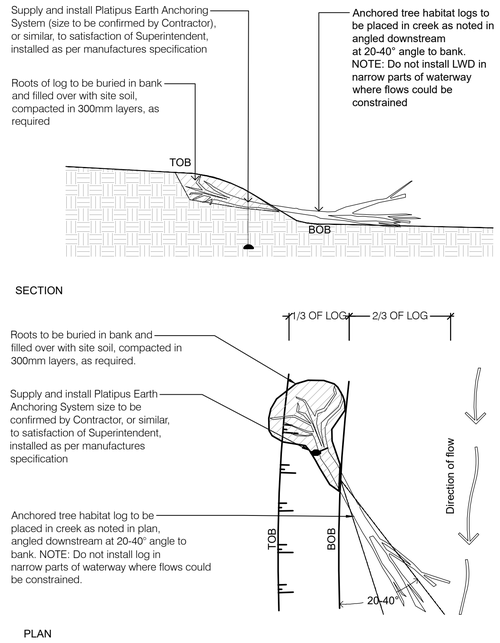


1 BATTER, CREEK CHANNEL AND CREEK LINE INVERT DETAIL
1:10



2 JUTE MAT LAYOUT
1:50



3 TYPICAL DETAIL - ANCHORED TREE HABITAT LOG
1:50

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CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
SOFTSCAPE
CREEK PLANTING DETAILS

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-432

REVISION
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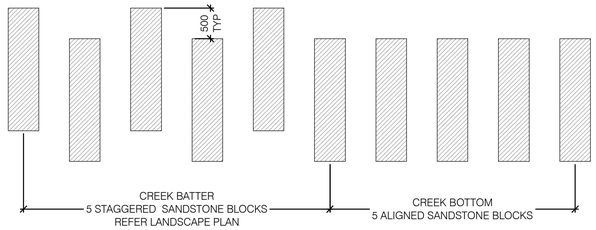
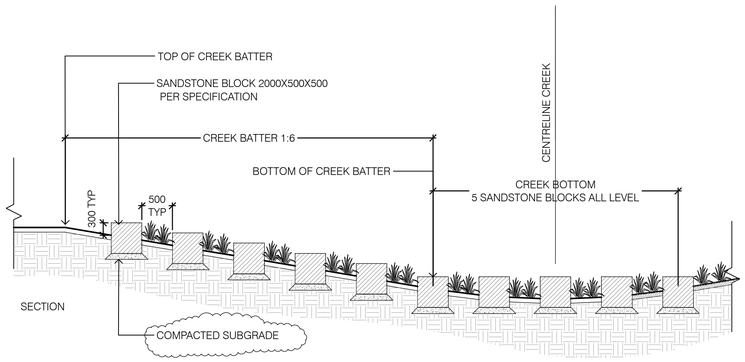


PLAN



SECTION

1 INFORMAL SANDSTONE LOG CROSSINGS
1:50

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CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
WALLS AND STAIRS

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-440

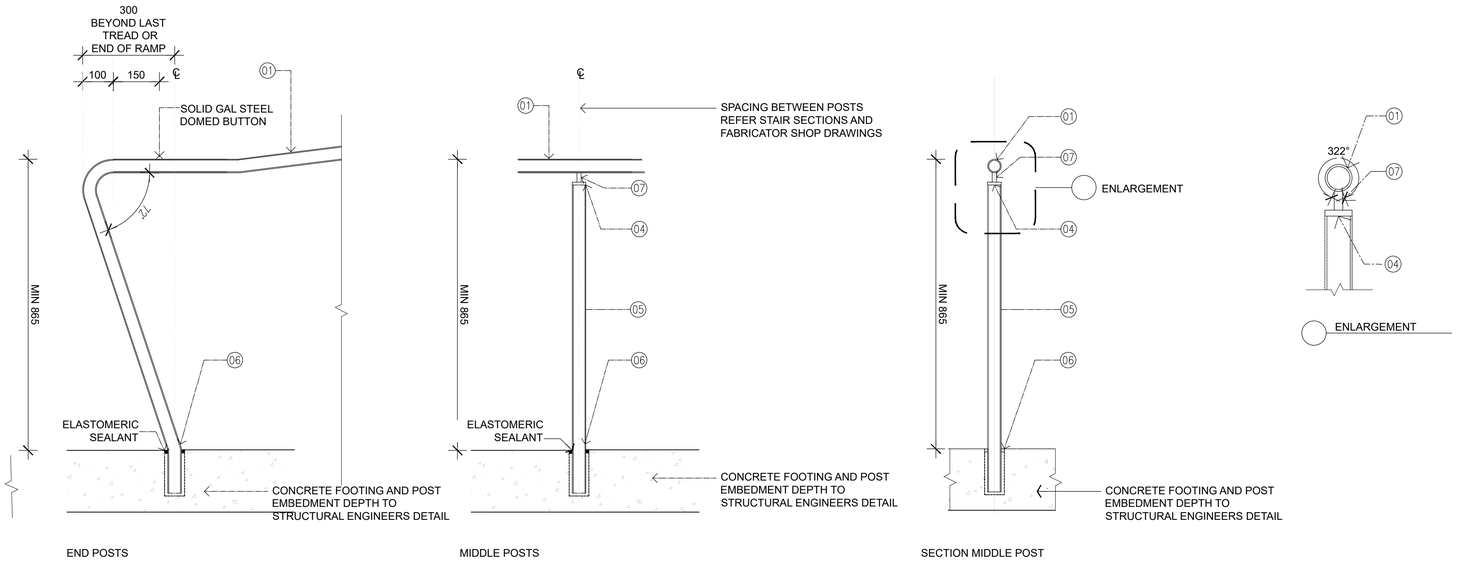
REVISION
-

LEGEND:

01. 44.3 OD X 3mm SS. CHS HANDRAIL. NO SITE WELDS
02. 15MM SOILD SS. MILD STEEL 'Y' FRAMED SPIGOT.
03. 20MM SOILD SS. MILD STEEL STEM
04. 10mm X 48.3Ø SS. MILD STEEL CAPPING TO TOP OF THE POST.
05. 48.3 OD X 4mm SS. CHS POST
06. 65mmØ CORE HOLE AND EMBED POST AT DEPTH TO STRUCTURAL ENGINEERS DETAIL WITH NON SHRINK GROUT
07. 14mm SOLID GAL. MILD SS SPIGOT

NOTES:

- NOM SIZES NOTED, REFER BCA/AUSTRALIAN STANDARDS AND ENGINEERS REQUIREMENTS.
- SHOP DRAWINGS REQUIRED

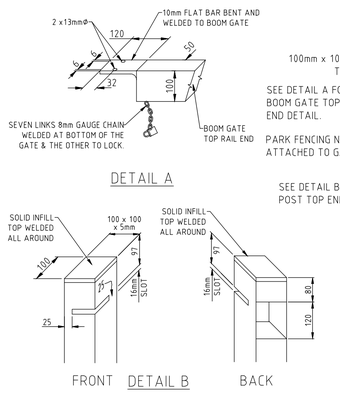


END POSTS

MIDDLE POSTS

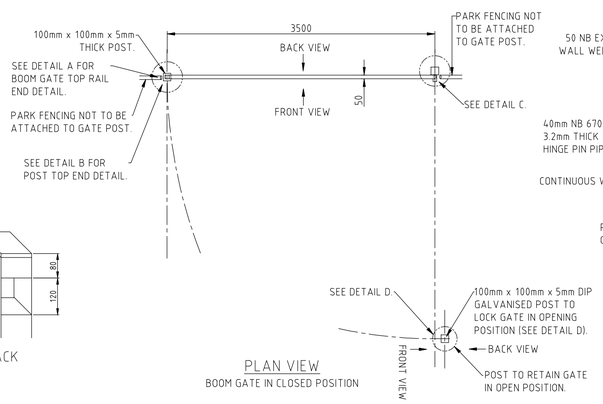
SECTION MIDDLE POST

1 TYPICAL HANDRAIL DETAIL
1:10

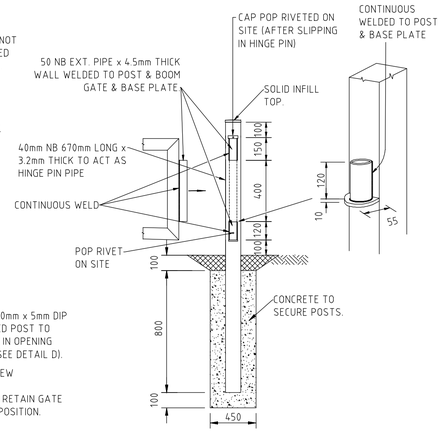


DETAIL A

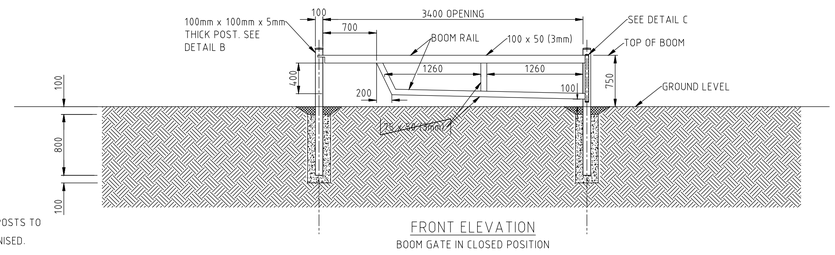
DETAIL B



PLAN VIEW
BOOM GATE IN CLOSED POSITION

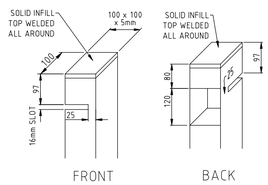


DETAIL C
BOOM HINGE DETAIL



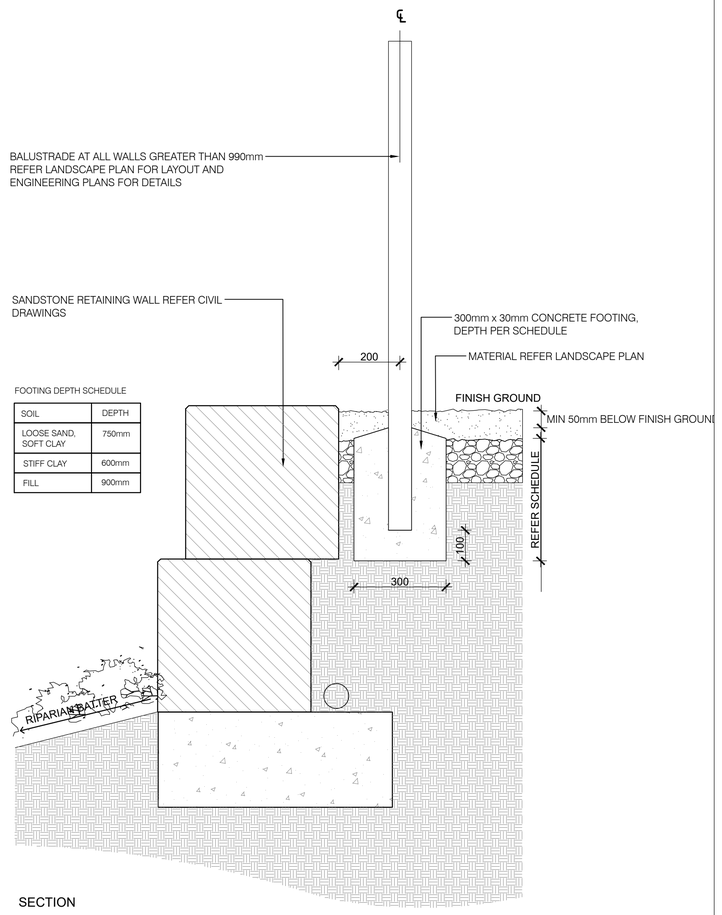
NOTES:
BOOM GATES AND POSTS TO
BE HOT DIP GALVANISED.

FRONT ELEVATION
BOOM GATE IN CLOSED POSITION



DETAIL D

2 BOOM GATE
1:20
BCC STANDARD DETAIL #A(BS)152M



FOOTING DEPTH SCHEDULE

SOIL	DEPTH
LOOSE SAND, SOFT CLAY	750mm
STIFF CLAY	600mm
FILL	900mm

SECTION

3 LAYOUT OF BALLUSTRADE AT POCKET PARKS
1:10

Paterson Design Studio
Landscape Architects / Urban Designers
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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 1

DRAWING TITLE
HANDRAIL AND GATE DETAILS

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-450

REVISION
-

ELARA P5 PARKLANDS: REACH 2

LANDSCAPE WORKS
CONSTRUCTION CERTIFICATE

Landscape Drawing List

Drawing No.	Title
LA-100	COVER SHEET & CONTEXT PLAN
LA-101	SHEET REFERENCE PLAN
LA-102	LEGEND
LA-103	PLANT SCHEDULES
	LANDSCAPE PLAN
LA-200	LANDSCAPE PLAN
LA-201	LANDSCAPE PLAN
	ENLARGEMENTS
LA-300	POCKET PARKS | POND 1
LA-301	POCKET PARKS | PEDESTRIAN BRIDGE 1
LA-302	POCKET PARK | POND 2 | RESERVE 1000
LA-303	RESERVE 1000
	DETAILS
LA-400	SITE FURNITURE
LA-410	HARDSCAPE
LA-430	PLANTING DETAILS
LA-431	TREE PLANTING DETAILS
LA-432	CREEK PLANTING DETAILS
LA-433	WETLAND PLANTING DETAILS
LA-440	WALLS & STAIRS
LA-450	HANDRAIL & GATE DETAILS
LA-460	REFERENCE SECTION
	SPECIFICATIONS
LA-500	LANDSCAPE SPECIFICATIONS

1 CONTEXT PLAN
NTS

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
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CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
COVER SHEET & CONTEXT PLAN

ISSUE
FOR CC

PROJECT NO.
-

SCALE
NA

DRAWING NO.
LA-100

REVISION
-

1 SHEET REFERENCE PLAN

NTS

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Registered Landscape Architect: Garth Paterson FAILA Reg#716
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CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
SHEET REFERNCE PLAN

ISSUE
FOR CC

PROJECT NO.
-

SCALE
NA

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DRAWING NO.
LA-101

REVISION
-

LEGEND

EXTENT OF WORKS

JOINLINE

100 YEAR FLOOD LEVEL

EDGES

E1	CONCRETE EDGE	2 LA410	
E2	TREATED PINE EDGE	2 430	3 431
RB	ROOT BARRIER	4 LA410	

WALLS & STAIRS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO DWG
W3	CONCRETE CHEEK WALL REFER DETAIL & SPEC	NO DWG
	STAIRS Arrow indicates up	

OTHER STRUCTURES

	BOULDERS REFER CIVIL	
	INFORMAL SANDSTONE LOG CROSSINGS	1 440
	ANCHORED HABITAT TREE LOG	3 432
GPT	GPT REFER CIVIL DWG	

FINISHES

Refer to Schedule of Landscape Works

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 LA410
P3	GRAVEL PAVING	3 LA410
P4	BOARDWALK DECKING BY OTHERS Refer structural dwg	

PLANTING

Refer to Schedule of Landscape Works

+	PROPOSED TREE PER SCHEDULE	1,2,3 431
1	TURF PER SCHEDULE	1 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
5	DAM PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
6	RAINGARDEN PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

GRADING

Refer to Schedule of Landscape Works

EX 0.000	EXISTING LEVEL
0.000	FINISHED SURFACE LEVEL
TW 0.000	TOP OF WALL LEVEL
BW 0.000	BOTTOM OF WALL LEVEL
TK 0.000	TOP OF KERB LEVEL
	RAMP arrow indicates up
FALL 1:20	DIRECTION AND GRADIENT of surface fall
2.0%	CROSS FALL
	BATTER

FURNITURE

Refer to Schedule of Landscape Works

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 LA400
F3	F3 - BIKE RACK Manufacturer: HUB Product: BCC - PARK SUIT	8 LA400
F4	F4 - FURNITURE TYPE 4 BBQ	
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 LA400
F8	F8 - INFORMAL SEATING LOG SUPPLIED & INSTALLED BY OTHERS	

BOLLARDS

B1	B1 - FIXED BOLLARD	1 LA400
B2	B2 - REMOVABLE BOLLARD	1 LA400
B3	B3 - FIXED BOLLARD IN VERGE	2,3 LA400

HANDRAILS & BALUSTRADES

	H1 - HANDRAIL	1 LA4XX
	H2 - BALUSTRADE	3 LA4XX

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 LA4XX

EXERCISE EQUIPMENT

E1	E1 - COMBI 2 Manufacturer: KOMPAN Product: FSW10200-0901
E2	E2 - PARALLEL BARS Manufacturer: KOMPAN Product: FSW20100-0901
E3	E3 - MAGNETIC BELLS Manufacturer: KOMPAN Product: FAZ10200-0900
E4	E4 - STEP 20CM Manufacturer: KOMPAN Product: FAZ30100-0900
E5	E5 - STEP 40CM Manufacturer: KOMPAN Product: FAZ30200-0900
E6	E6 - STEP 60CM Manufacturer: KOMPAN Product: FAZ30300-0900
E7	E7 - SUSPENSION TRAINER Manufacturer: KOMPAN Product: FAZ10100
E8	E8 - COMBI 1 Manufacturer: KOMPAN Product: FSW10100

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CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS REACH 2

DRAWING TITLE
LEGEND

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-102

REVISION
-

STREET TREES

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Ang cos	*Angophora costata*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	39
Ang flo	*Angophora floribunda*	100L	As Shown	2.50	40mm	2x50x50x1800mm KDHW posts	107
Cor mac	*Corymbia maculata*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	3

TREES IN PARKLAND

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Ang cos	*Angophora costata*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	10
Ang sub	*Angophora subvelutina*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	21
Euc amp	*Eucalyptus amplifolia*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	20
Euc bot	*Eucalyptus botryoides*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	19
Euc cre	*Eucalyptus crebra*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	24
Euc eug	*Eucalyptus eugenioides*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	18
Euc pun	*Eucalyptus punctata*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	4
Euc ter	*Eucalyptus tereticornis*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	9
Mel sty	*Melaleuca styphelioides*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	19

MASSPLANTING IN VERGE

TUFTED GRASSES

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Car app	*Carex appressa*	Hiko/tube	6 per M2	n/a	n/a	n/a	1456
Dia lon	*Dianella longifolia*	Hiko/tube	6 per M2	n/a	n/a	n/a	340
Imp cyl	*Imperata cylindra*	Hiko/tube	7 per M2	n/a	n/a	n/a	1672
Iso nod	*Isolepis nodosa*	Hiko/tube	6 per M2	n/a	n/a	n/a	1464
Jun usi	*Juncus usitatua*	Hiko/tube	6 per M2	n/a	n/a	n/a	1670
Lom tan	*Lomandra tanika*	Hiko/tube	6 per M2	n/a	n/a	n/a	1477
Poa lab	*Poa labillardieri*	Hiko/tube	6 per M2	n/a	n/a	n/a	1010
The aus	*Themeda australis*	Hiko/tube	6 per M2	n/a	n/a	n/a	956

POCKET PARK PLANT LISTS

TREES

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Ang sub	*Angophora subvelutina*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	2
Ban int	*Banksia integrifolia*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	8
Buc cel	*Buchinghamia celissima*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	1
Cor fic	*Corymbia ficifolia*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	3
Cup ana	*Cupaniopsis anacardioides*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	3
Euc cre	*Eucalyptus crebra*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	4
Fli aus	*Flindersia australis*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	3
Har pen	*Harpullia pendula*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	4
Mel sty	*Melaleuca styphelioides*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	3
Ste sin	*Stenocarpus sinuatus*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	2
Tri lau	*Tristaniopsis laurina 'Luscious'*	100L	as shown	n/a	n/a	2x 50x50x1800mm KDHW posts	4

TUFTED GRASSES

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Car app	*Carex appressa*	Hiko/tube	6 per M2	n/a	n/a	n/a	234
Dor exc	*Doryanthes excelsa*	Hiko/tube	6 per M2	n/a	n/a	n/a	4
Dia lon	*Dianella longifolia*	Hiko/tube	6 per M2	n/a	n/a	n/a	150
Dia rev	*Dianella revoluta*	Hiko/tube	6 per M2	n/a	n/a	n/a	60
Iso nod	*Isolepis nodosa*	Hiko/tube	6 per M2	n/a	n/a	n/a	220
Jun usi	*Juncus usitatua*	Hiko/tube	6 per M2	n/a	n/a	n/a	362
Lom tan	*Lomandra tanika*	Hiko/tube	6 per M2	n/a	n/a	n/a	382
Poa lab	*Poa labillardieri*	Hiko/tube	6 per M2	n/a	n/a	n/a	211
The aus	*Themeda australis*	Hiko/tube	6 per M2	n/a	n/a	n/a	258

RESERVE 1000 PLANT LISTS

TREES

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Ang cos	*Angophora costata*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	14
Ang flo	*Angophora floribunda*	100L	As Shown	2.50	40mm	2x50x50x1800mm KDHW posts	8
Ang sub	*Angophora subvelutina*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	6
Cor cit	*Corymbia citrodora*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	4
Cor mac	*Corymbia maculata*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	56
Euc amp	*Eucalyptus amplifolia*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	13
Euc bot	*Eucalyptus botryoides*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	18
Euc cre	*Eucalyptus crebra*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	24
Euc eug	*Eucalyptus eugenioides*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	4
Euc ter	*Eucalyptus tereticornis*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	8
Nys sly	*Nyssa sylvatica*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	2
Pyr uss	*Pyrus ussuriensis*	100L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	6

TUFTED GRASSES

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Car app	*Carex appressa*	Hiko/tube	6 per M2	n/a	n/a	n/a	1461
Dia rev	*Dianella revoluta*	Hiko/tube	6 per M2	n/a	n/a	n/a	385
Imp cyl	*Imperata cylindra*	Hiko/tube	6 per M2	n/a	n/a	n/a	2250
Iso nod	*Isolepis nodosa*	Hiko/tube	6 per M2	n/a	n/a	n/a	1175
Jun usi	*Juncus usitatua*	Hiko/tube	6 per M2	n/a	n/a	n/a	1140
Lom tan	*Lomandra tanika*	Hiko/tube	6 per M2	n/a	n/a	n/a	1248
Poa lab	*Poa labillardieri*	Hiko/tube	6 per M2	n/a	n/a	n/a	883
The aus	*Themeda australis*	Hiko/tube	6 per M2	n/a	n/a	n/a	872

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
PLANT SCHEDULES

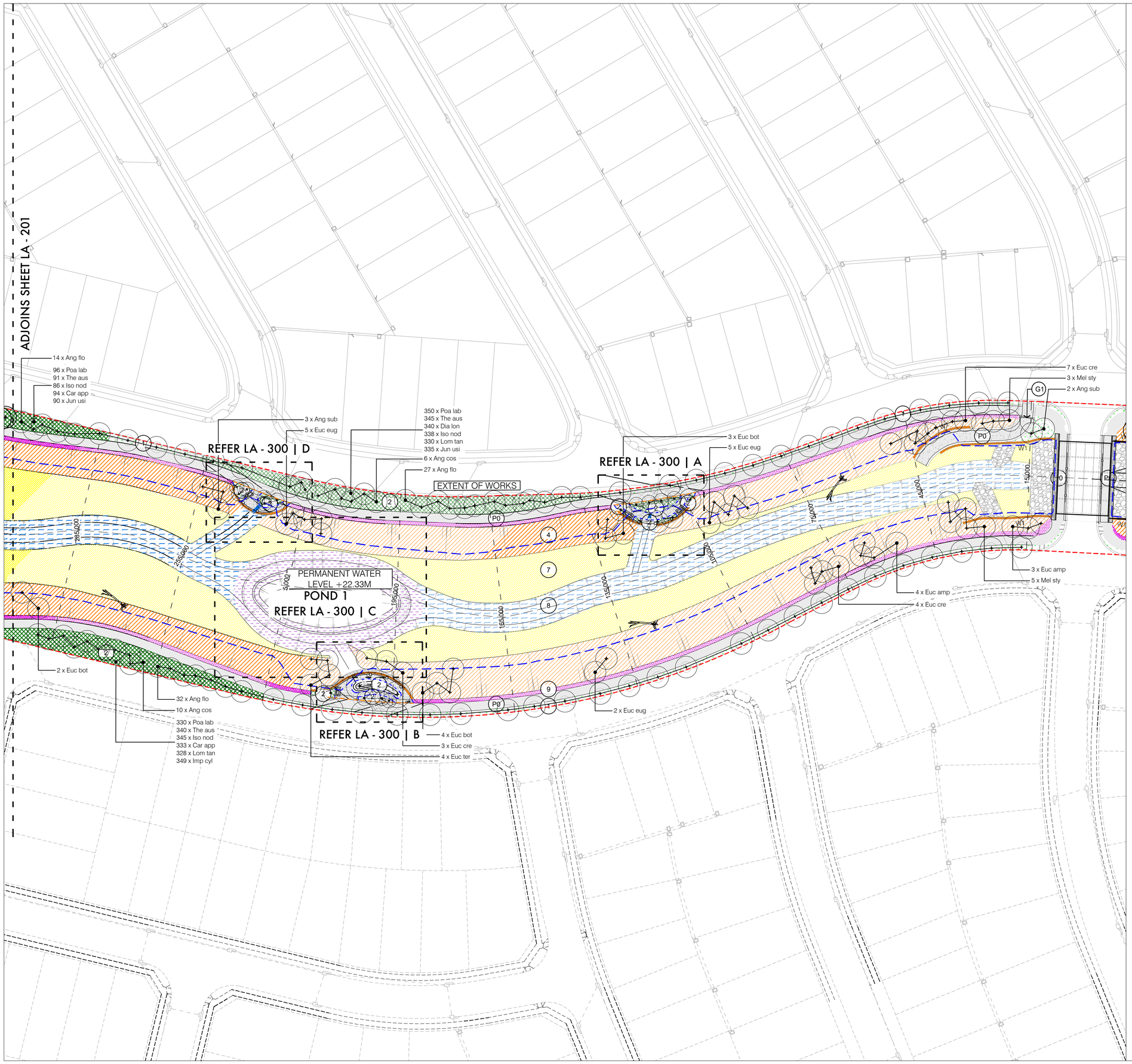
ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-103

REVISION
-



LEGEND

EXTENT OF WORKS

JOINLINE

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 / LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 / LA410
P3	GRAVEL PAVING	3 / LA410

EDGES

E1	CONCRETE EDGE	2 / LA410
E2	TREATED PINE EDGE	2 / 430
RB	ROOT BARRIER	4 / LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO DWG

OTHER STRUCTURES

	BOULDERS REFER CIVIL	
	INFORMAL SANDSTONE LOG CROSSINGS	1 / 440
	ANCHORED HABITAT TREE LOG	3 / 432
GPT	GPT REFER CIVIL DWG	

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 / 431
1	TURF PER SCHEDULE	1 / 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 / 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 / LA4XX

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS REACH 2

DRAWING TITLE
LANDSCAPE PLAN

ISSUE
FOR CC

PROJECT NO.
-

SCALE
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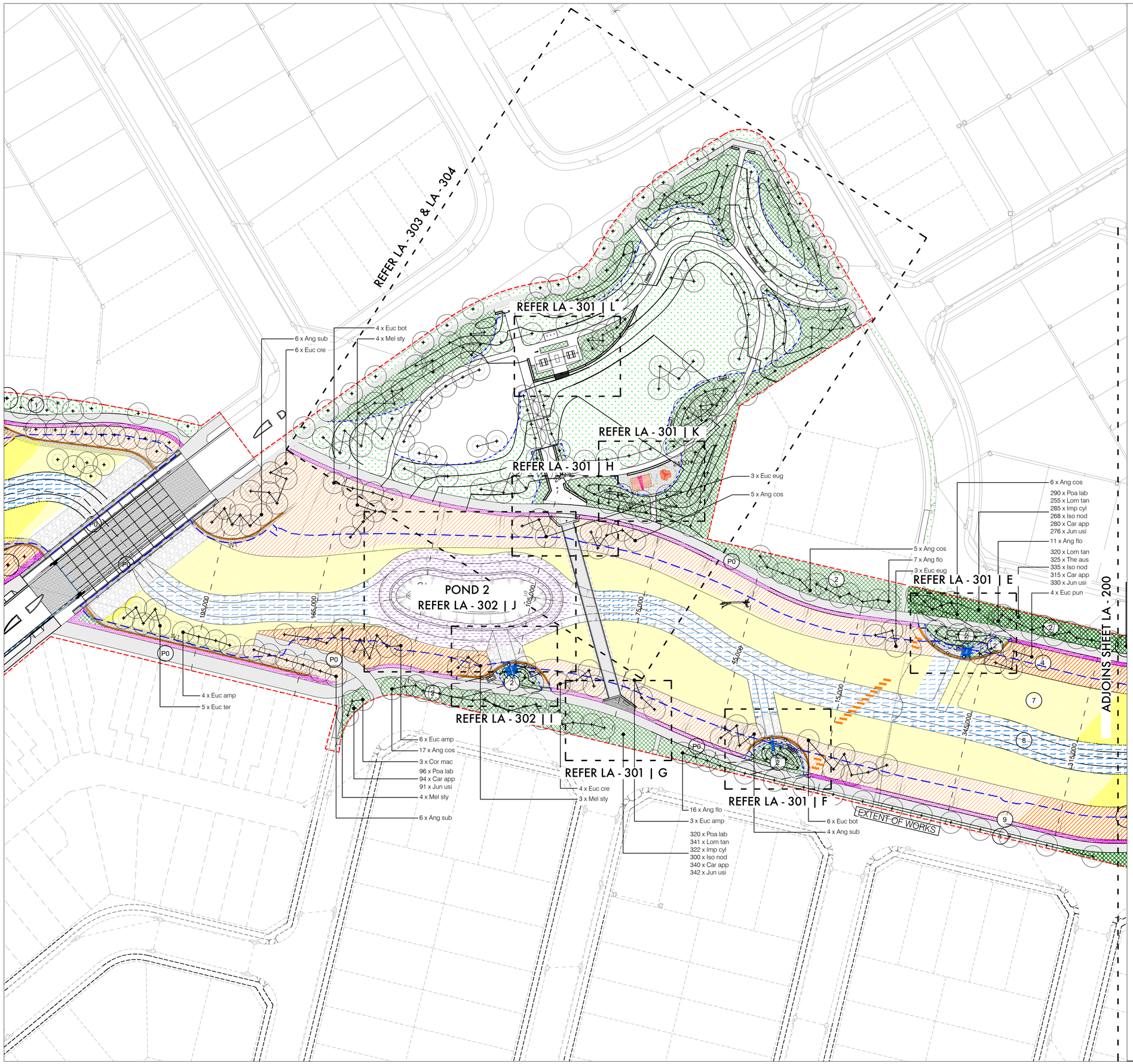
DRAWING NO.
LA-200

REVISION
-



LEGEND

EXTENT OF WORKS

JOINLINE

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 LA410
P3	GRAVEL PAVING	3 LA410

EDGES

E1	CONCRETE EDGE	2 LA410
E2	TREATED PINE EDGE	2 430
RB	ROOT BARRIER	4 LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO DWG

OTHER STRUCTURES

	BOULDERS REFER CIVIL	
	INFORMAL SANDSTONE LOG CROSSINGS	1 440
	ANCHORED HABITAT TREE LOG	3 432
GPT	GPT REFER CIVIL DWG	

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 431
1	TURF PER SCHEDULE	1 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 LA4XX

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BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS REACH 2

DRAWING TITLE
LANDSCAPE PLAN

ISSUE
FOR CC

PROJECT NO.
-

SCALE
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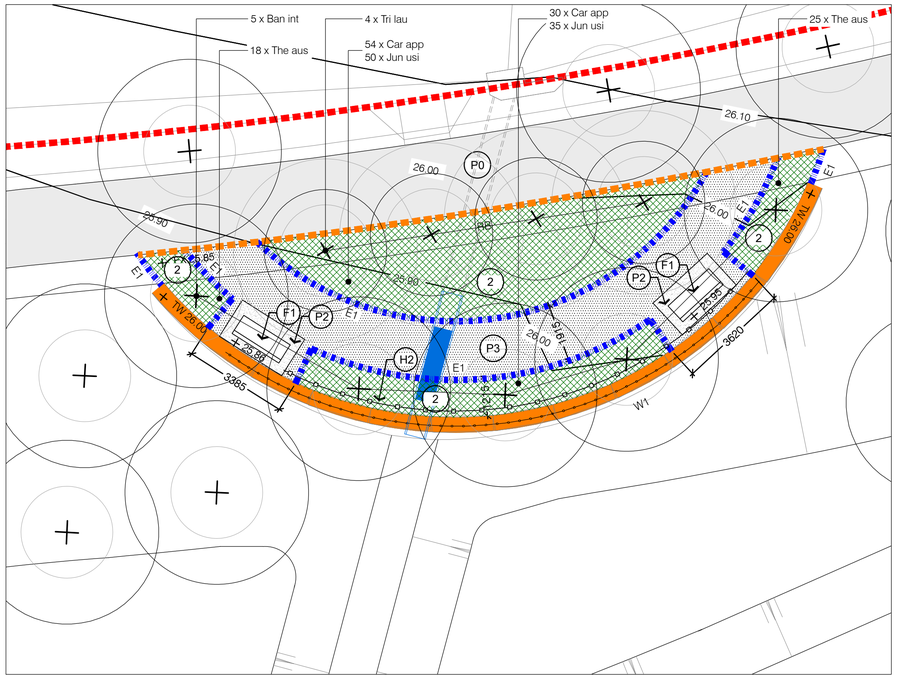
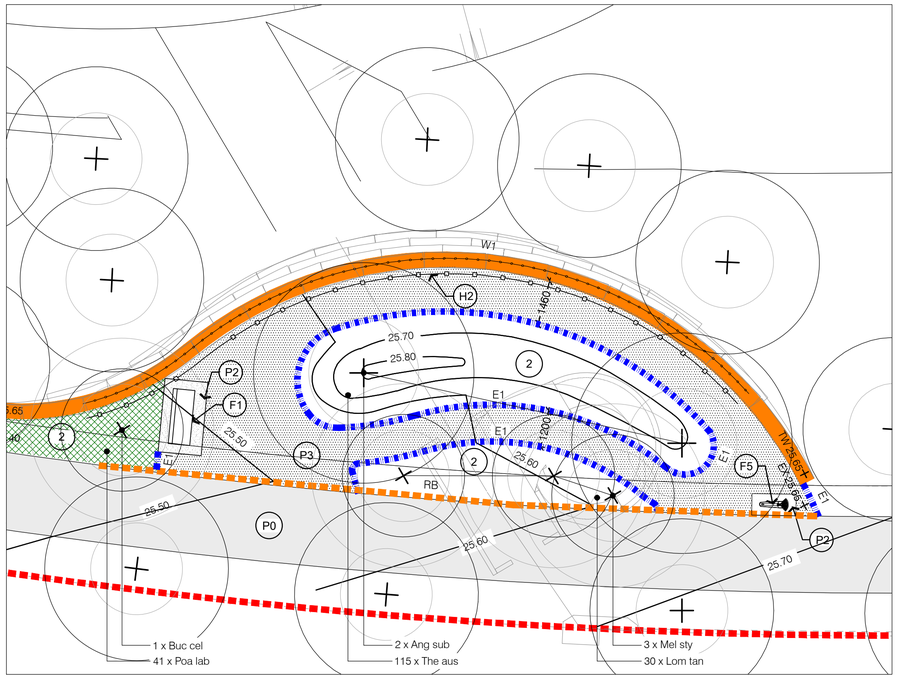
N

DRAWING NO.
LA-201

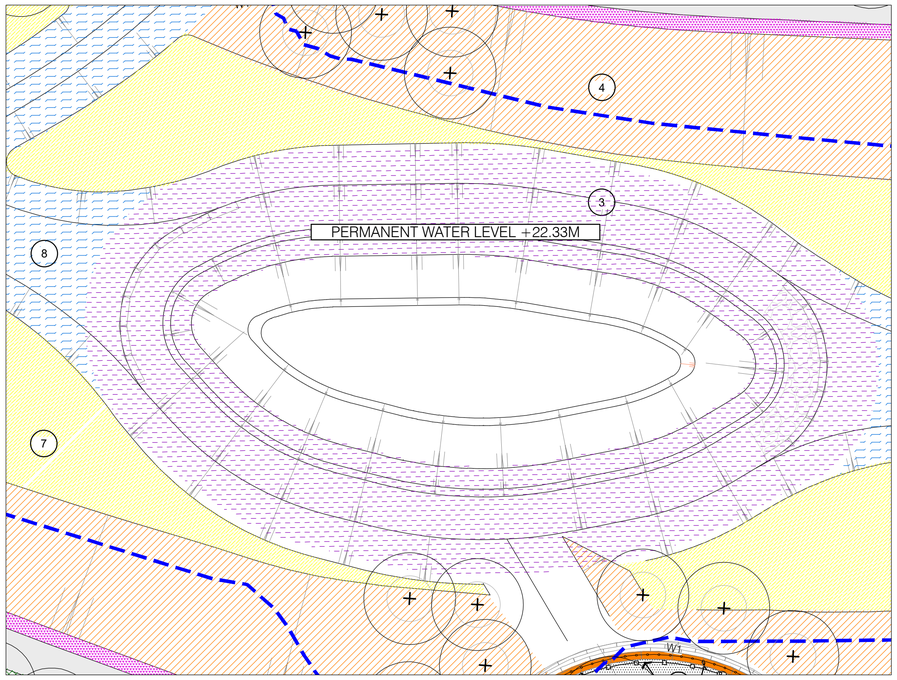
REVISION
-



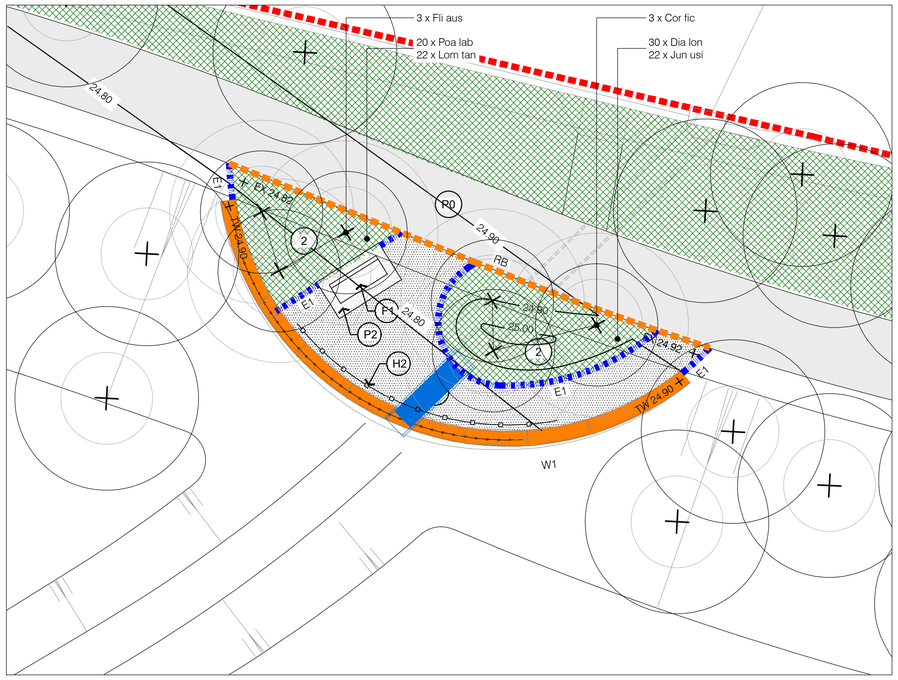
ENLARGEMENT AREA A - POCKET PARK
SCALE 1:100 @ A1



ENLARGEMENT AREA B - POCKET PARK
SCALE 1:100 @ A1



ENLARGEMENT AREA C - POND 1
SCALE 1:200 @ A1



ENLARGEMENT AREA D - POCKET PARK
SCALE 1:100 @ A1

LEGEND

EXTENT OF WORKS

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 LA410
P3	GRAVEL PAVING	3 LA410

EDGES

E1	CONCRETE EDGE	2 LA410
E2	TREATED PINE EDGE	2 430
RB	ROOT BARRIER	4 LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO DWG

OTHER STRUCTURES

	BOULDERS REFER CIVIL	
	INFORMAL SANDSTONE LOG CROSSINGS	1 440

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 431
1	TURF PER SCHEDULE	1 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FURNITURE

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 LA400
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 LA400

BOLLARDS

B2	B2 - REMOVABLE BOLLARD	1 LA400

HANDRAILS & BALUSTRADES

	H2 - BALUSTRADE	3 LA4XX

EXERCISE EQUIPMENT

E7	E7 - SUSPENSION TRAINER Manufacturer: KOMPAN Product: FAZ10100	
E8	E8 - COMBI 1 Manufacturer: KOMPAN Product: FSW10100	

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admin@pdsdesign.com.au
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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

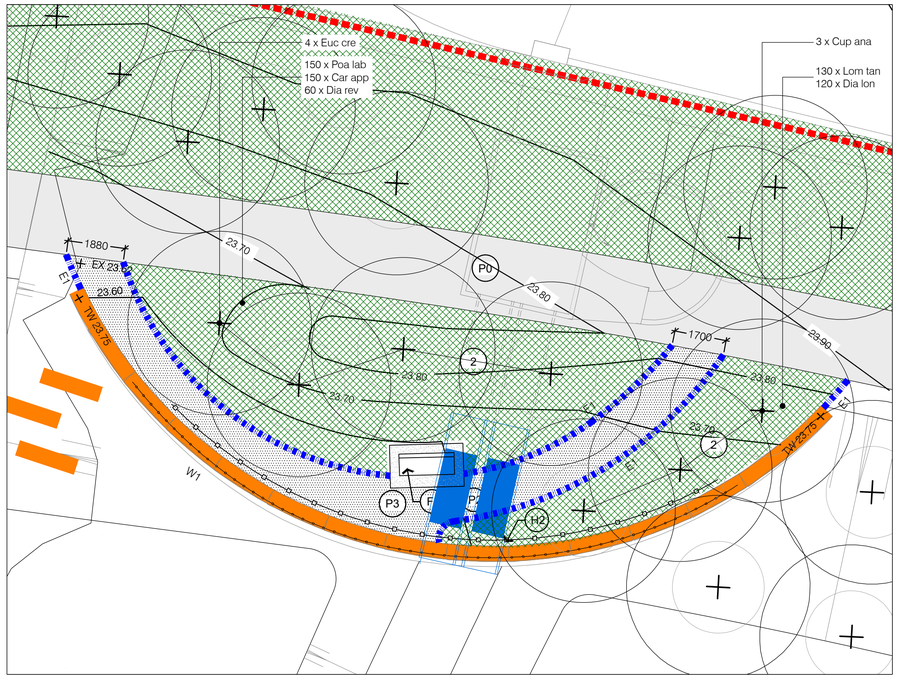
PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
ENLARGEMENT AREAS

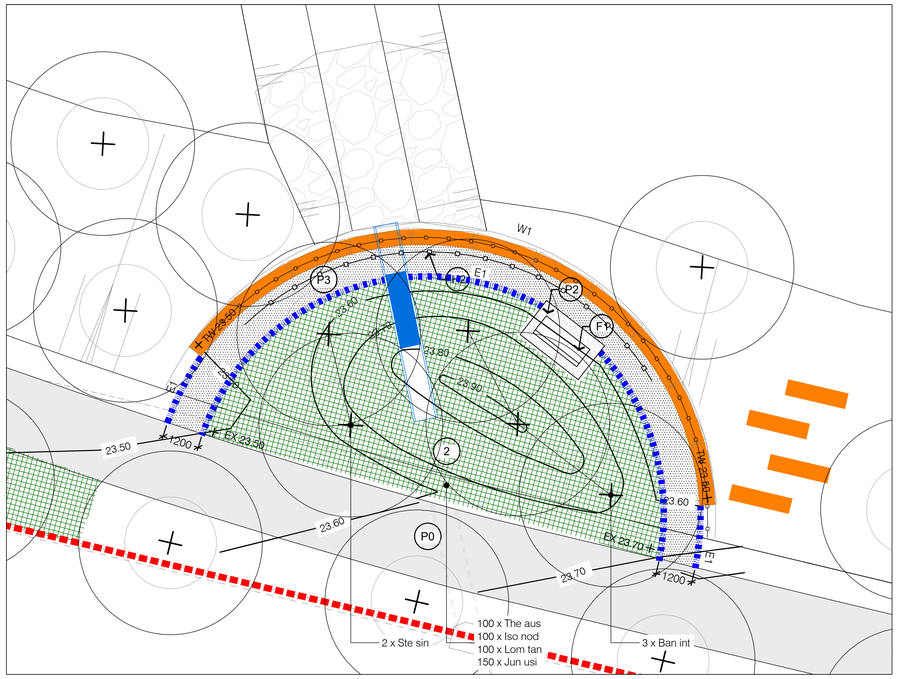
ISSUE FOR CC
PROJECT NO. -

SCALE AS SHOWN
N

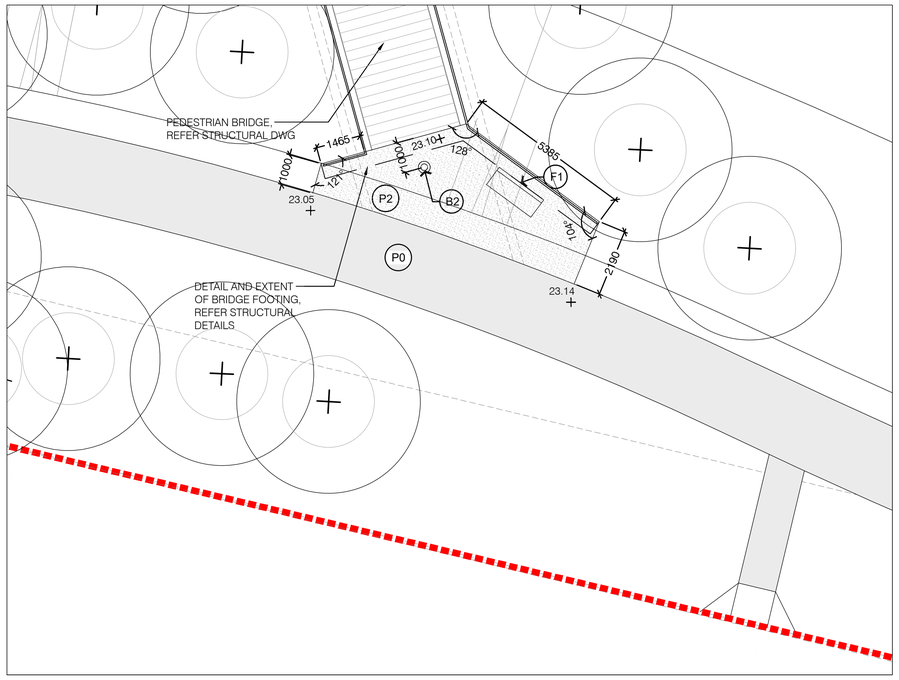
DRAWING NO. LA-300
REVISION -



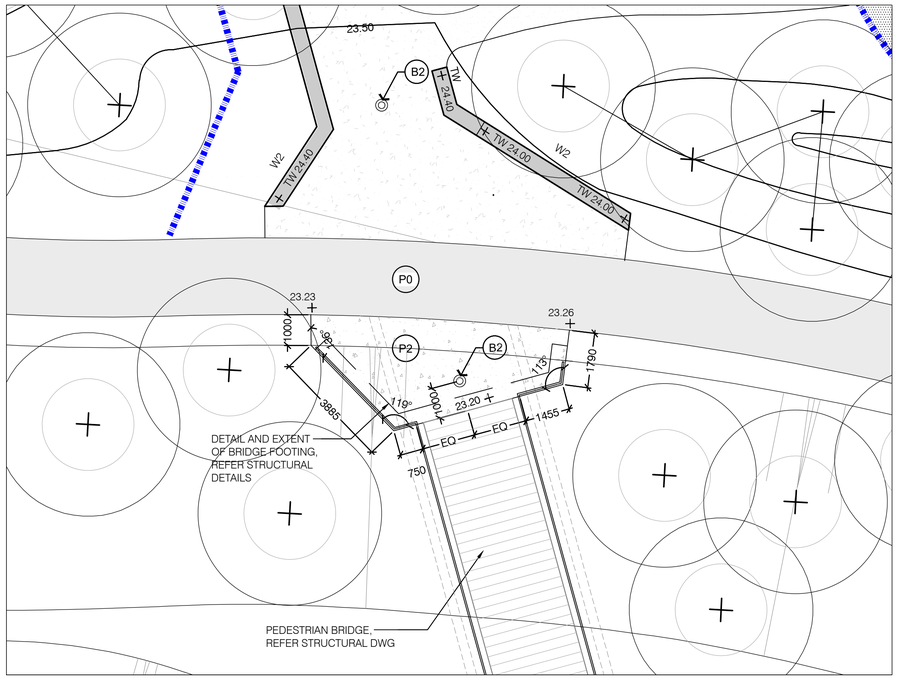
ENLARGEMENT AREA E - POCKET PARK
SCALE 1:100 @ A1



ENLARGEMENT AREA F - POCKET PARK
SCALE 1:100 @ A1



ENLARGEMENT AREA G - PEDESTRIAN BRIDGE 1
SCALE 1:100 @ A1



ENLARGEMENT AREA H - PEDESTRIAN BRIDGE 1
SCALE 1:100 @ A1

LEGEND

EXTENT OF WORKS

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 LA410
P3	GRAVEL PAVING	3 LA410

EDGES

E1	CONCRETE EDGE	2 LA410
E2	TREATED PINE EDGE	2 430
RB	ROOT BARRIER	4 LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO DWG

OTHER STRUCTURES

	BOULDERS REFER CIVIL	
	INFORMAL SANDSTONE LOG CROSSINGS	1 440

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 431
1	TURF PER SCHEDULE	1 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FURNITURE

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 LA400
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 LA400

BOLLARDS

B2	B2 - REMOVABLE BOLLARD	1 LA400

HANDRAILS & BALUSTRADES

	H2 - BALUSTRADE	3 LA4XX

EXERCISE EQUIPMENT

E7	E7 - SUSPENSION TRAINER Manufacturer: KOMPAN Product: FAZ10100	
E8	E8 - COMBI 1 Manufacturer: KOMPAN Product: FSW10100	

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Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

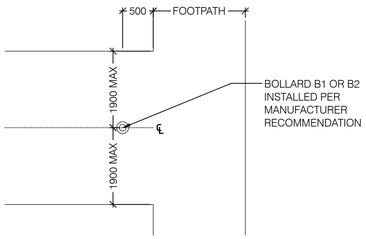
PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
ENLARGEMENT AREAS

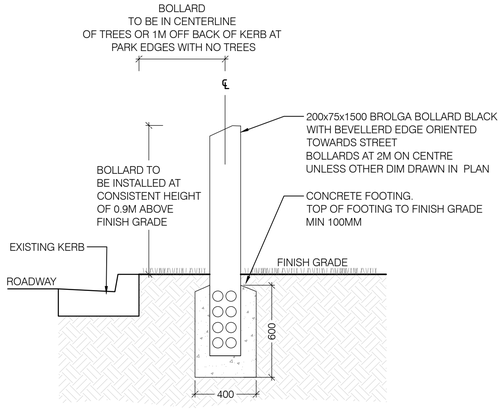
ISSUE FOR CC
PROJECT NO. -

SCALE 1:100 @ A1 1:200 @ A3
0 1 2 3 4 5[m]
N

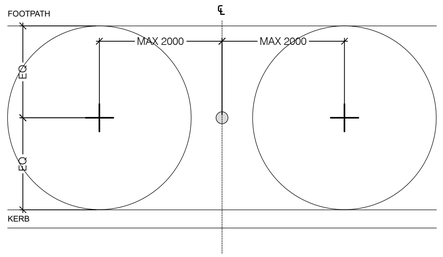
DRAWING NO. LA-301
REVISION -



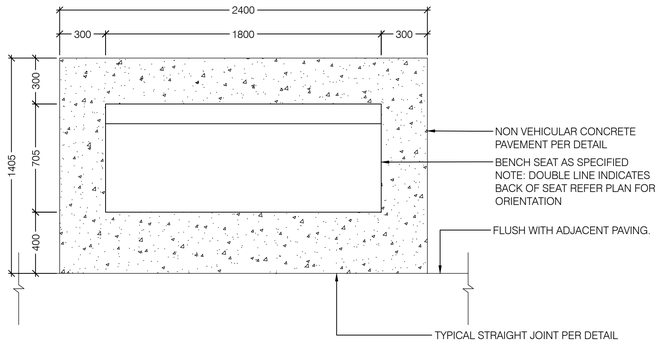
1 B1 / B2 - TYPICAL REMOVABLE BOLLARD LAYOUT DETAIL
1:50



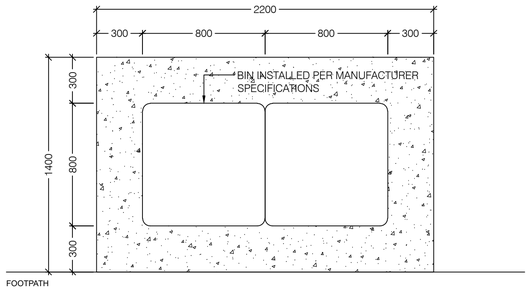
2 B3 - FIXED BOLLARD IN VERGE
1:20



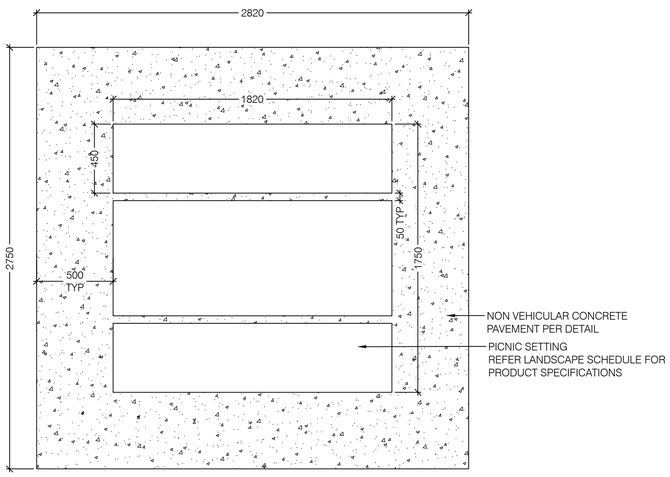
3 B3 - FIXED BOLLARD IN VERGE LAYOUT
1:50



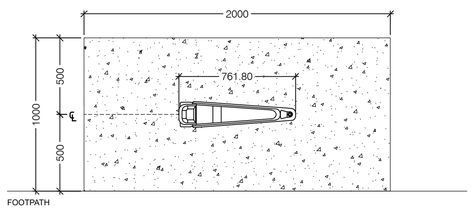
4 F1 - TYPICAL BENCH LAYOUT ON CONCRETE PAD
1:20



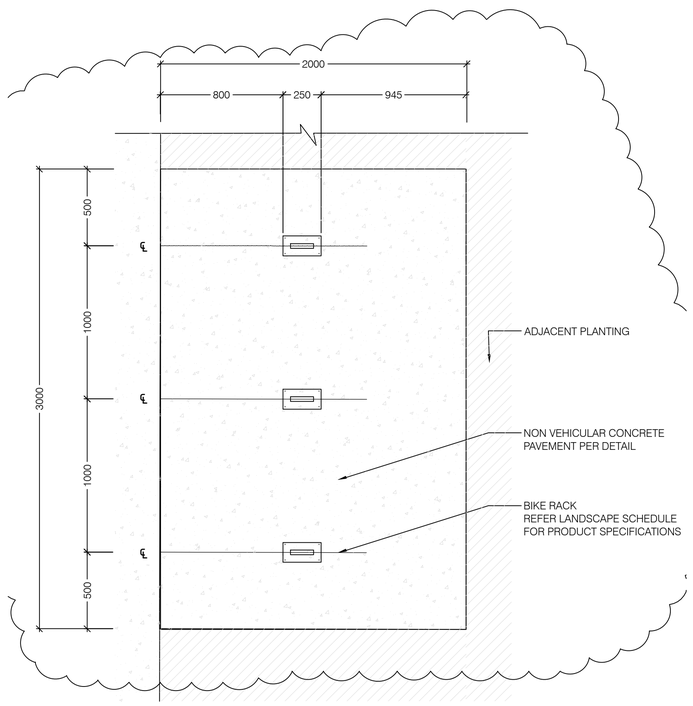
5 F7 - TYPICAL BIN LAYOUT ON CONCRETE PAD
1:20



6 LAYOUT OF PICNIC SETTING ON CONCRETE PAD
1:20



7 F5 - TYPICAL DRINKING FOUNTAIN ON CONCRETE PAD
1:20



8 BIKE RACK LAYOUT DETAIL
1:20

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Design
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16a/1-15 Tramore Place
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admin@pdsdesign.com.au
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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
SITE FURNITURE

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-400

REVISION
-

JOINT SEALANT:
10MM WIDE X 15MM DEEP EXPANDITE 'THIOFLEX 600' JOINT SEALANT RECESSED WITH POLYETHYLENE TAPE BOND BREAKER OR APPROVED EQUIVALENT, PLACE TAPE AFTER IDES OF RECESS HAVE BEEN PRIMED FOR SEALANT.

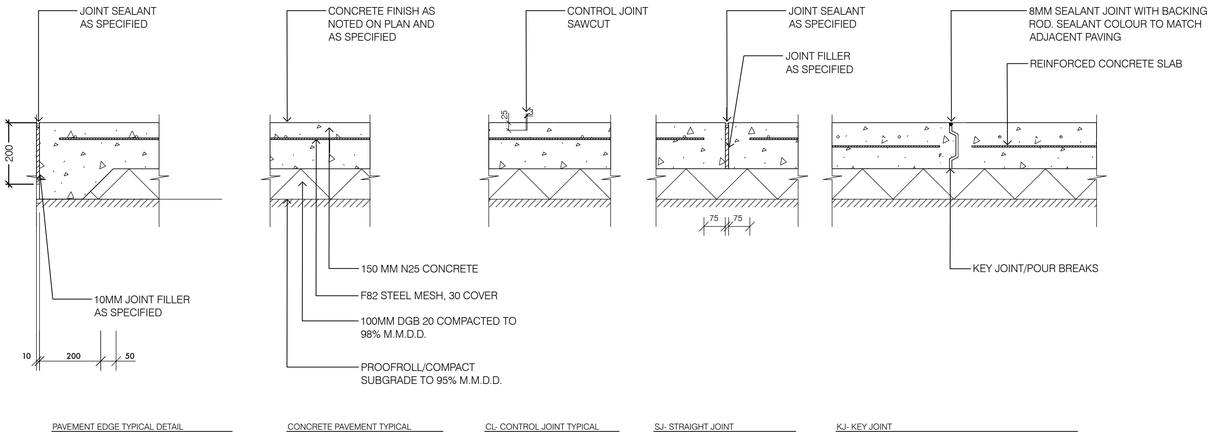
JOINT FILLER:
10MM THICK EXPANDITE 'FLEXCELL' COMPRESSIBLE FILLER BOARD, OR APPROVED EQUIVALENT.

NOTE:
CONCRETE AS PER BCC PATH PAVING POLICY AND BCC ENGINEERING GUIDE FOR DEVELOPMENT 2005 WORKS SPECIFICATION

NOTE:
ENSURE DGB BASE IS SET 150MM BELOW JOINT LOCATION TO ENSURE THAT THERE ARE NO GAPS BETWEEN BOTTOM OF JOINT AND DGB LAYER

THICKNESS AND COLOUR OF TYPICAL PAVEMENT				
PAVEMENT	MM	COLOUR	FINISH	REINFORCEMENT
P1	125	GREY	BROOM	F82 STEEL MESH
P2	125	GREY	BROOM	N/A

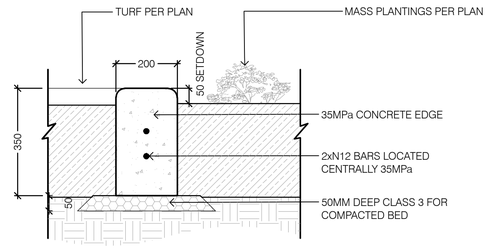
TYPICAL JOINT SPACING (unless other noted in plans)			
With of Path	KJ	SJ	JC
3.0m	6.1m	18.1m	3.05m
2.5m	6.1m	18.1m	3.05m
1.2m	3.0m	12.0m	1.5m



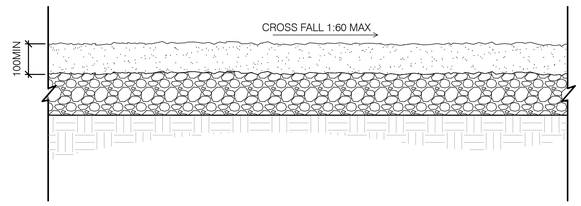
PAVEMENT EDGE TYPICAL DETAIL | CONCRETE PAVEMENT TYPICAL | CL- CONTROL JOINT TYPICAL | SJ- STRAIGHT JOINT | KJ- KEY JOINT

1 P1 & P2 CONCRETE PAVEMENT
1:10

NOTE: PROVIDE TOOLED JOINT AT 1M CENTRES TO 5mm DEPTH. EDGES CHAMFERED
CONCRETE COLOUR TO MATCH ADJACENT PATHWAYS.

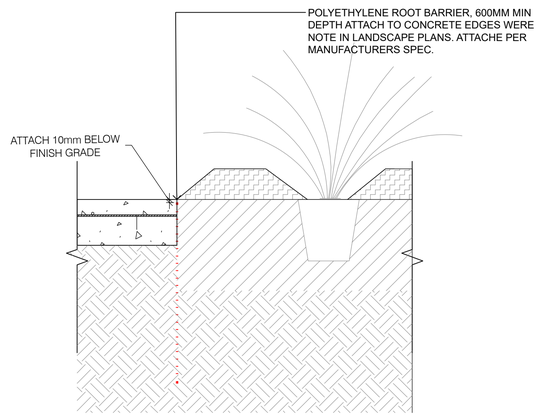


2 CONCRETE EDGER
1:10



NOTES
1) MIX 20:1 SELECTED NATURAL TONE SANDSTONE GRAVEL:CEMENT. CEMENT: TYPE GP TP AS 3972.
2) GRAVEL GRADING: MAXIMUM PARTICLE IZE 10mm, 30 - 40% PASSING 5mm SIEVE, OF UNIFORM COLOUR AND LOW PLASTICITY.
3) GRAVEL SOURCE AND COLOUR; BUFF ASS SUPPLIED BY ANL R APPROVED EQUIVALENT.
4) COMPACTION; COMPACT TO ACHIEVE A DRY DENSITY RATIO OF 95% WHEN TESTED TO AS 1289.5.4.1 (STANDART COMPACTION).

3 CRUSHED SANDSTONE GRAVEL PAVEMENT
1:10



4 STREET TREE IN VERGE
1:10

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS REACH 2

DRAWING TITLE
HARDSCAPE

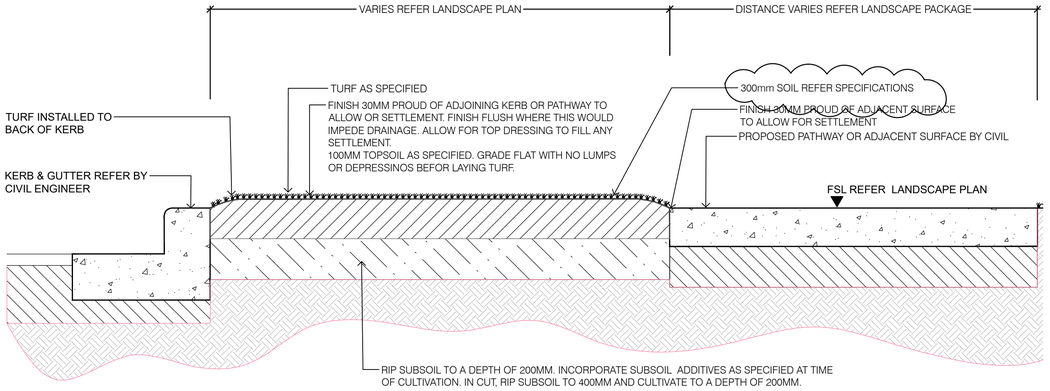
ISSUE
FOR CC

PROJECT NO.
-

SCALE

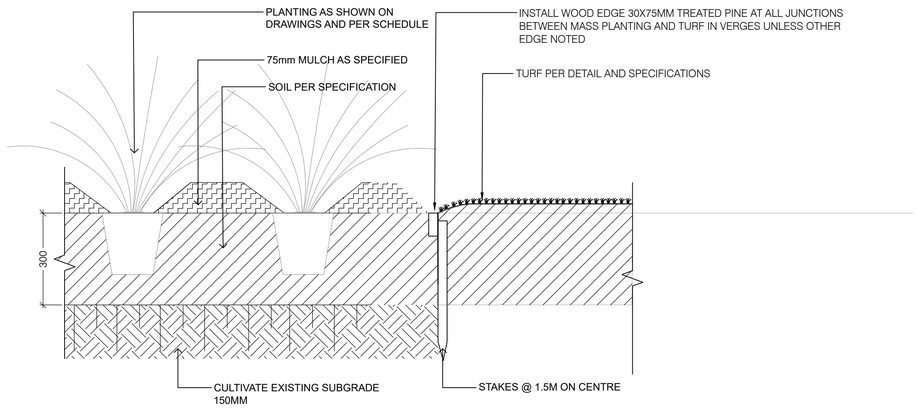
DRAWING NO.
LA-410

REVISION
-



NOTE:
ENSURE GROUND IS FREE FROM ANY CONTAMINATED MATERIALS DETRIMENTAL TO PLANT GROWTH.
PREVENT COMPACTION BY CONSTRUCTION PLANT.
COMPACT LIGHTLY AND UNIFORMLY IN 100MM LAYERS. TO PROVIDE A FINISHED SURFACE AT DESIGN LEVELS. SMOOTH AND FREE OF STONES OR LUMPS OF SOIL AND GRADED TO DRAIN FREELY WITHOUT PONDING TO CATCHMENT POINTS.

1 SITE PREPARATION TURF
1:10



2 MULCHED MASS PLANTING
1:10

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CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
SOFTSCAPE
PLANTING DETAILS

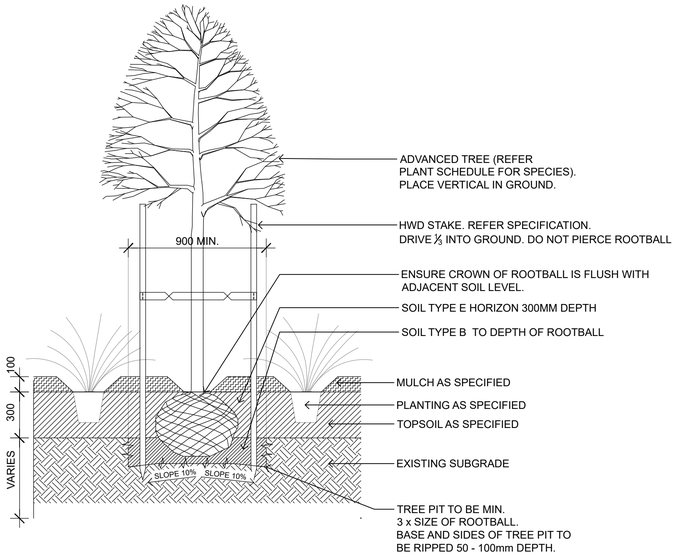
ISSUE
FOR CC

PROJECT NO.
-

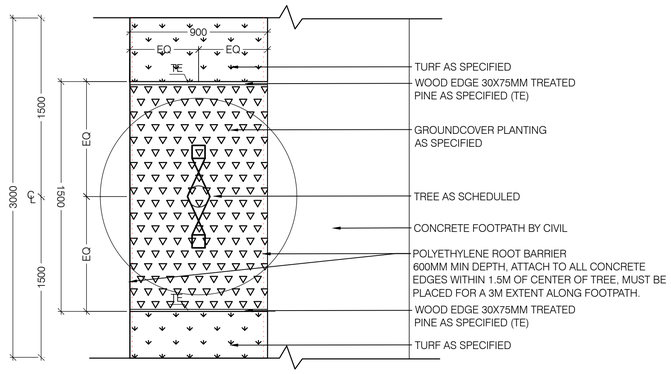
SCALE

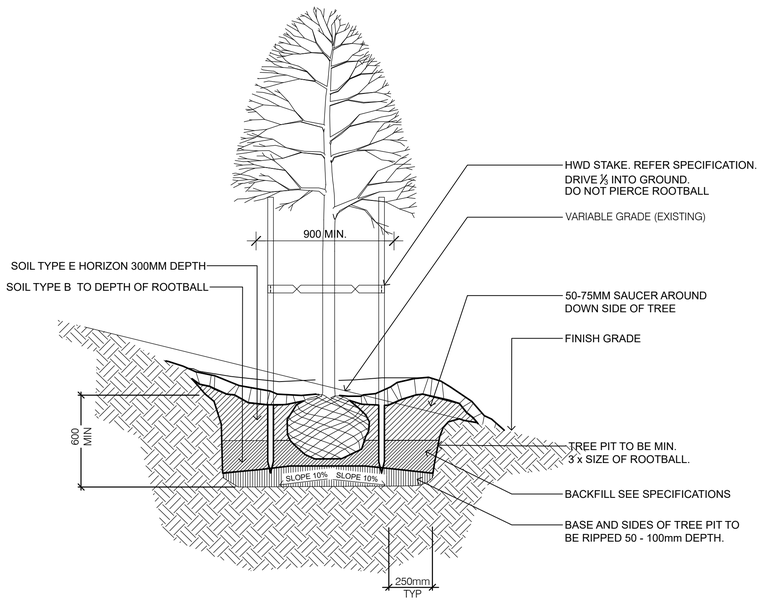
DRAWING NO.
LA 430

REVISION
-

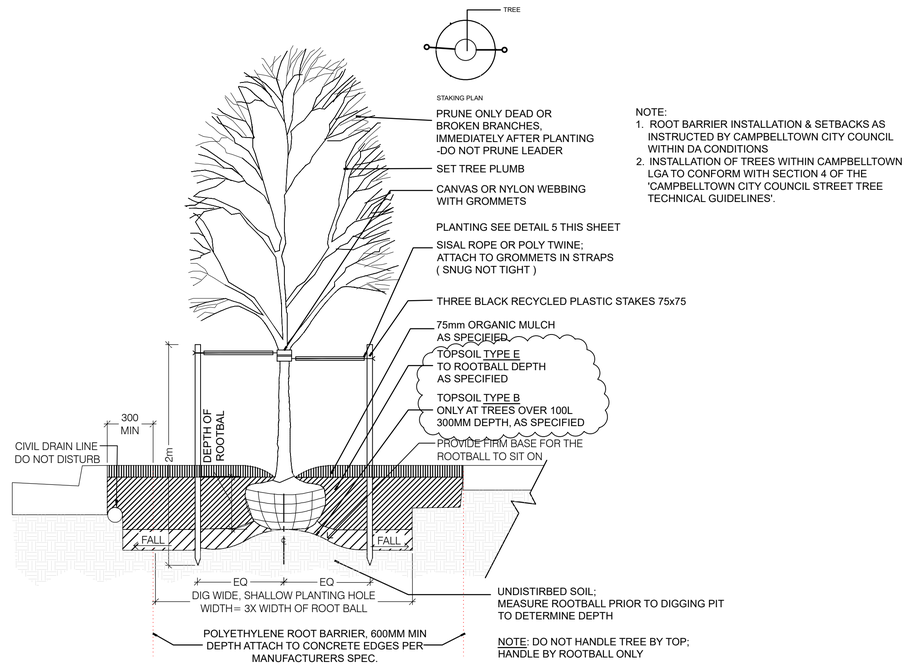


1 TREE IN MASSED PLANTING
1:20





2 TREE IN BATTER
1:20



NOTE:
1. ROOT BARRIER INSTALLATION & SETBACKS AS INSTRUCTED BY CAMPBELLTOWN CITY COUNCIL WITHIN DA CONDITIONS
2. INSTALLATION OF TREES WITHIN CAMPBELLTOWN LGA TO CONFORM WITH SECTION 4 OF THE 'CAMPBELLTOWN CITY COUNCIL STREET TREE TECHNICAL GUIDELINES'.

3 STREET TREE IN VERGE
1:20

Paterson Design Studio
Landscape Architects / Urban Designers
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admin@pdsdesign.com.au
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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS REACH 2

DRAWING TITLE
SOFTSCAPE
TREE PLANTING DETAILS

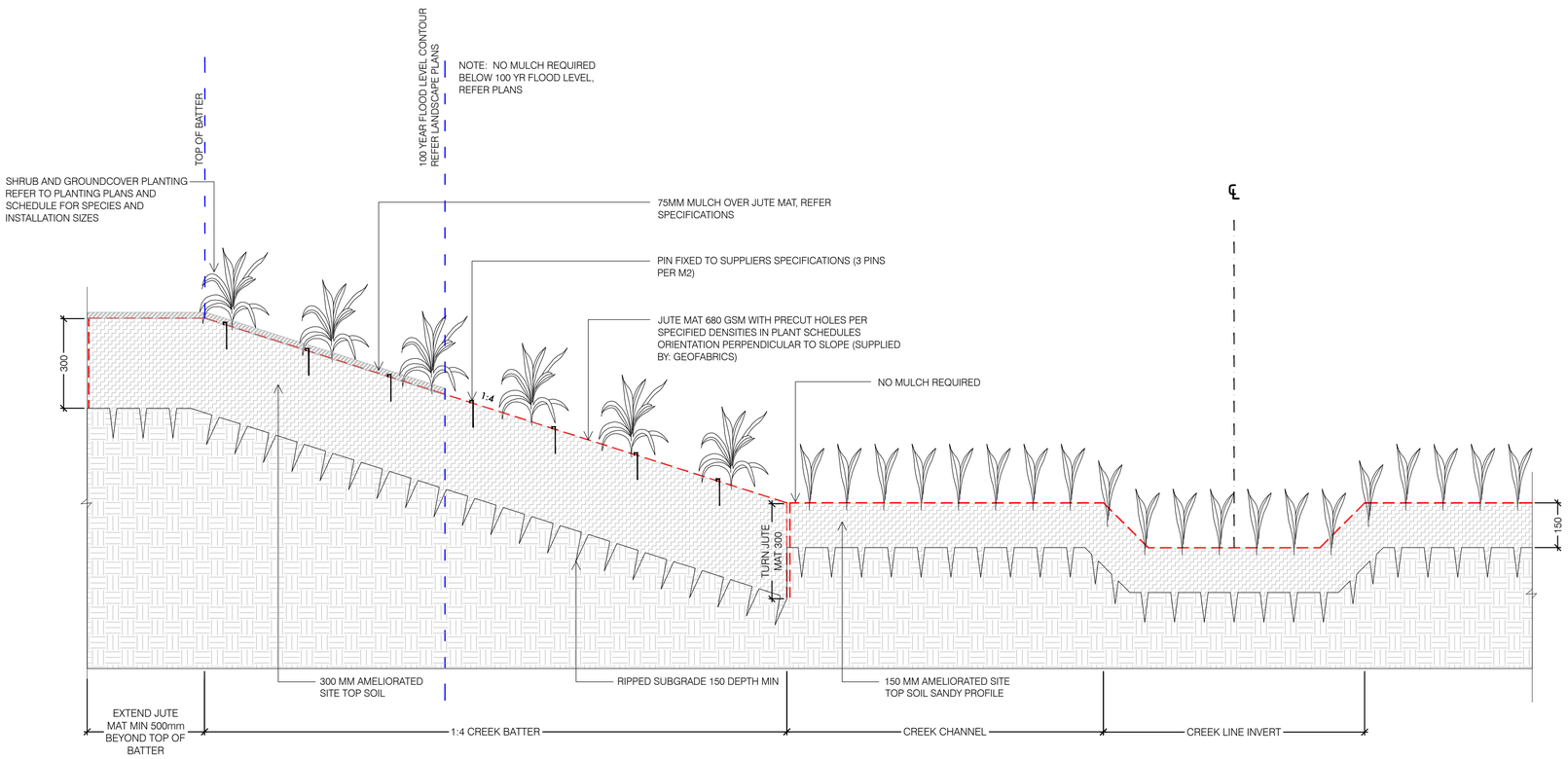
ISSUE
FOR CC

PROJECT NO.
-

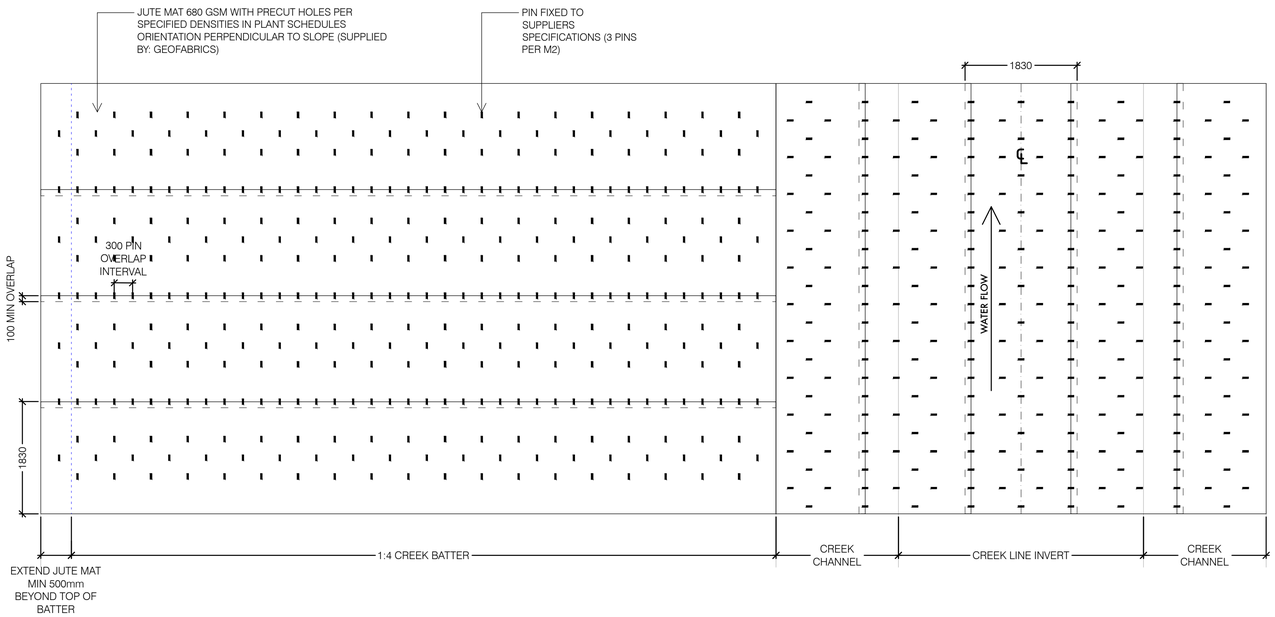
SCALE

DRAWING NO.
LA 431

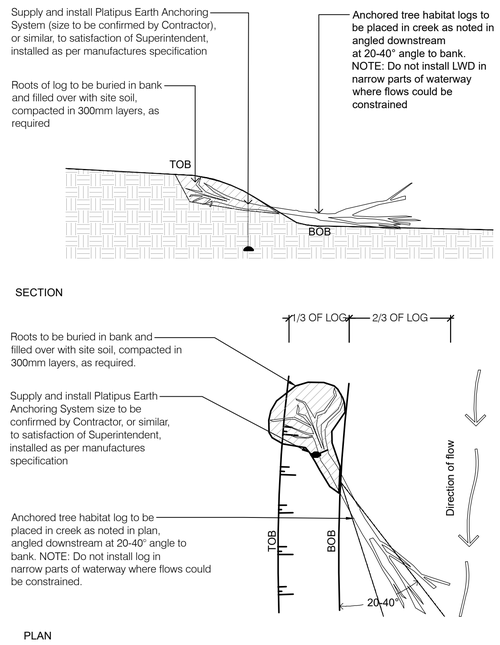
REVISION
-



1 BATTER, CREEK CHANNEL AND CREEK LINE INVERT DETAIL
1:10



2 JUTE MAT LAYOUT
1:50



3 TYPICAL DETAIL - ANCHORED TREE HABITAT LOG
1:50

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16a/1-15 Tramore Place
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admin@pdsdesign.com.au
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& PROJECT MANAGERS

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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
SOFTSCAPE
CREEK PLANTING DETAILS

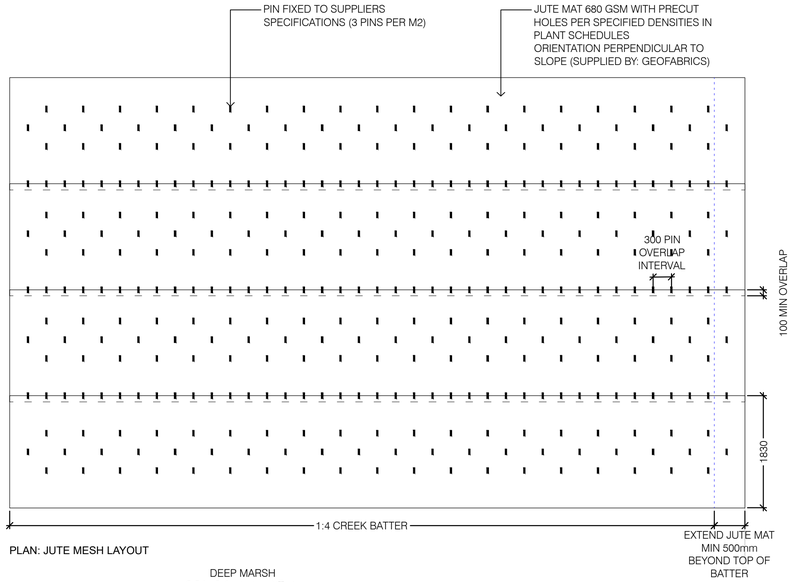
ISSUE
FOR CC

PROJECT NO.
-

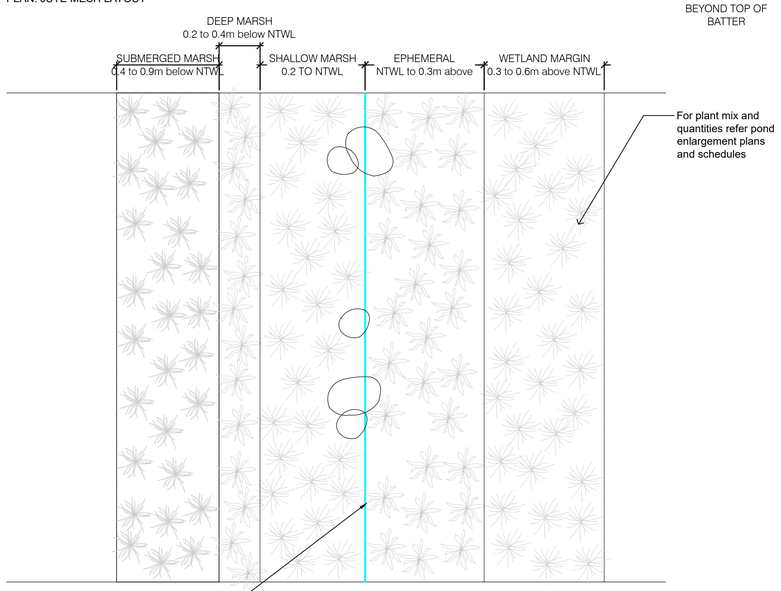
SCALE

DRAWING NO.
LA-432

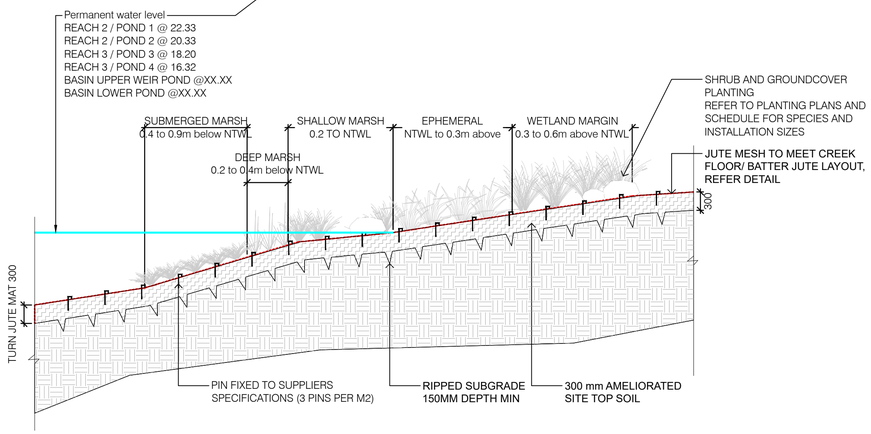
REVISION
-



PLAN: JUTE MESH LAYOUT



PLAN: PLANT LAYOUT



SECTION: PLANT LAYOUT & JUTE MESH

1 WETLAND PLANTING
1:50

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Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

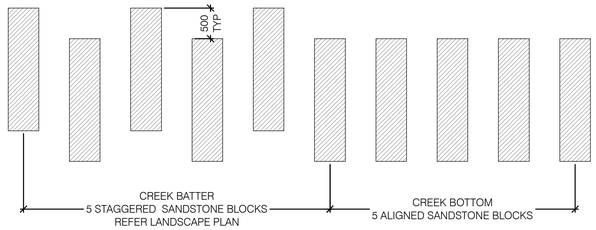
CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 2

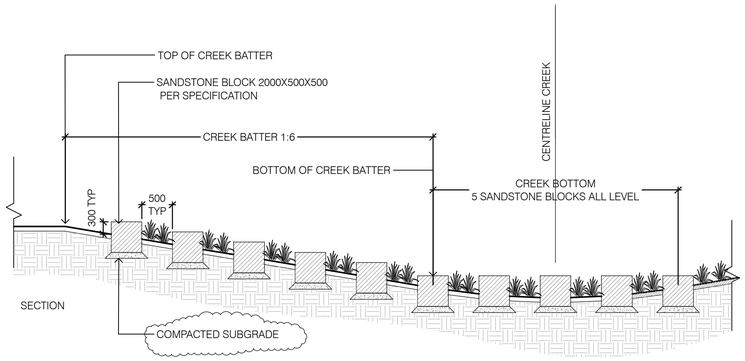
DRAWING TITLE
SOFTSCAPE
WETLANS PLANTING DETAILS

ISSUE FOR CC
PROJECT NO. -
SCALE

DRAWING NO. LA 433
REVISION -

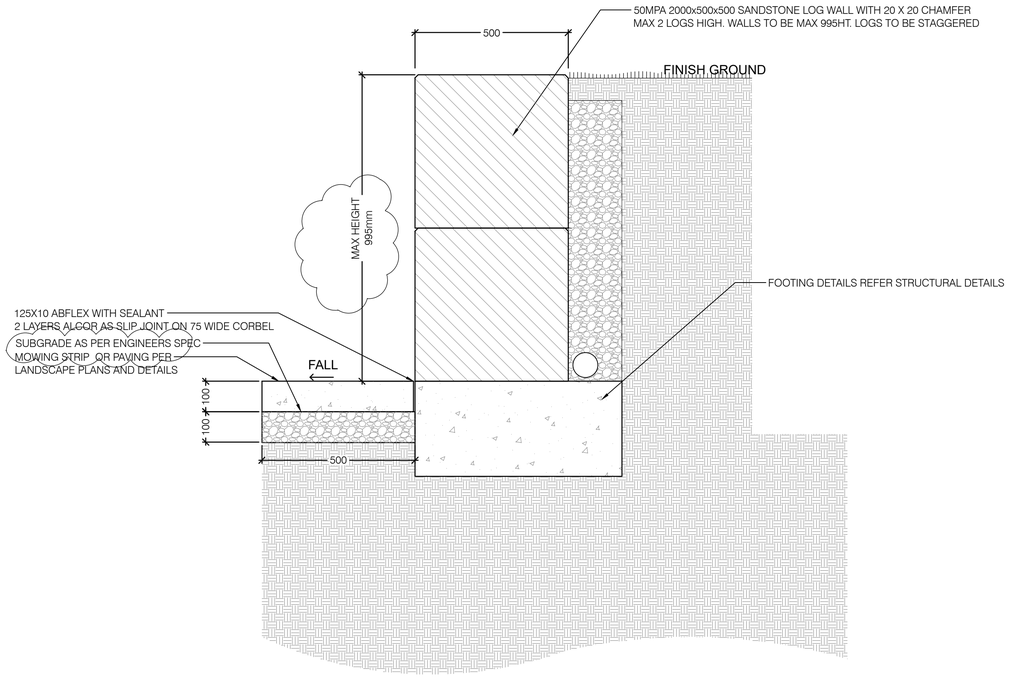


PLAN



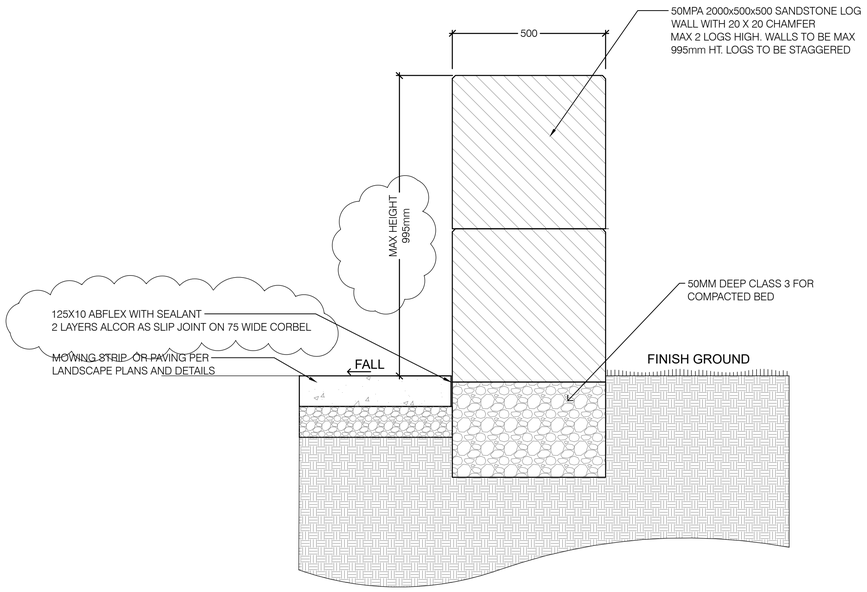
SECTION

1 INFORMAL SANDSTONE LOG CROSSINGS
1:50



SECTION

2 RETAINING SANDSTONE LOG WALL
1:10



SECTION

3 FREESTANDING SANDSTONE LOG WALL
1:10

Paterson
Design
Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
WALLS AND STAIRS

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-440

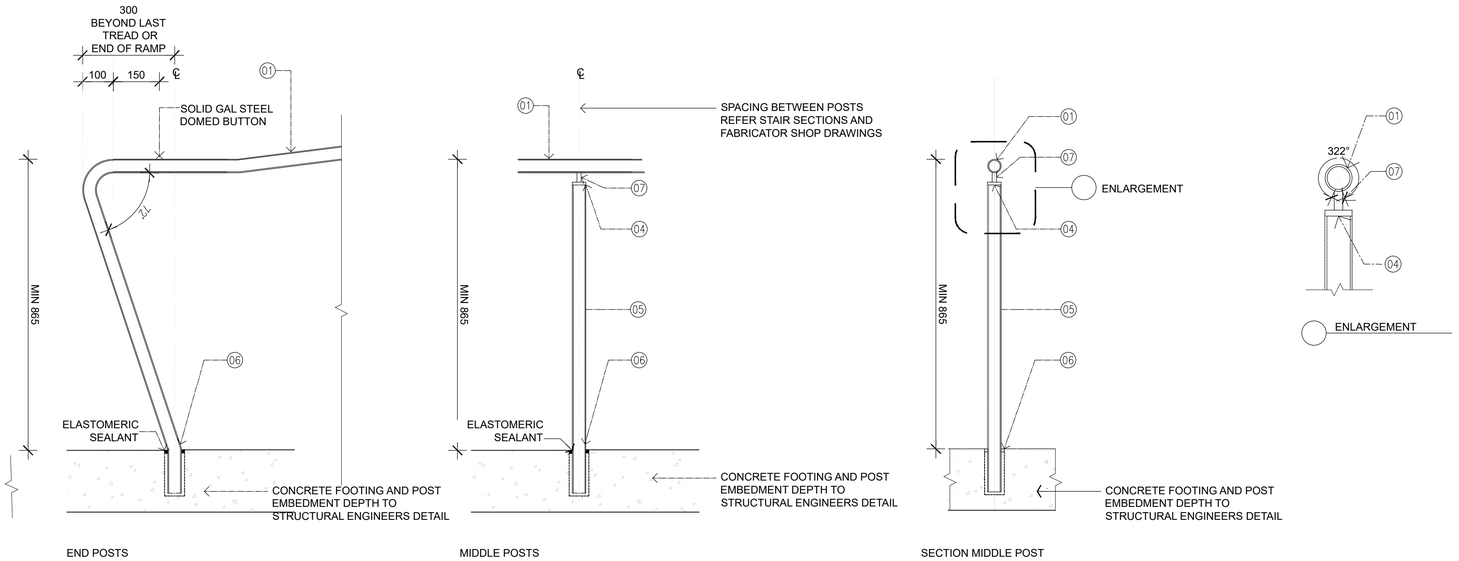
REVISION
-

LEGEND:

01. 44.3 OD X 3mm SS. CHS HANDRAIL. NO SITE WELDS
02. 15MM SOILD SS. MILD STEEL 'Y' FRAMED SPIGOT.
03. 20MM SOILD SS. MILD STEEL STEM
04. 10mm X 48.3Ø SS. MILD STEEL CAPPING TO TOP OF THE POST.
05. 48.3 OD X 4mm SS. CHS POST
06. 65mmØ CORE HOLE AND EMBED POST AT DEPTH TO STRUCTURAL ENGINEERS DETAIL WITH NON SHRINK GROUT
07. 14mm SOLID GAL. MILD SS SPIGOT

NOTES:

- NOM SIZES NOTED, REFER BCA/AUSTRALIAN STANDARDS AND ENGINEERS REQUIREMENTS.
- SHOP DRAWINGS REQUIRED

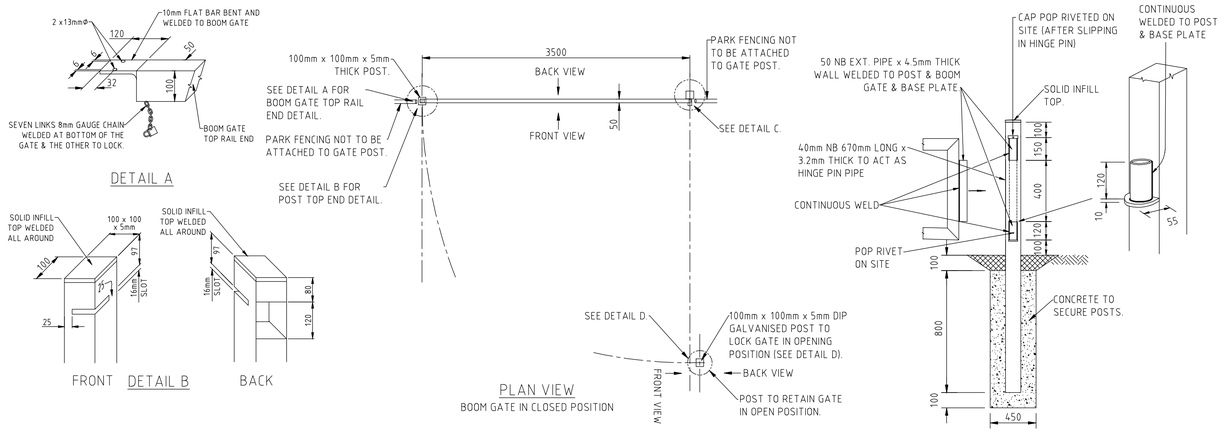


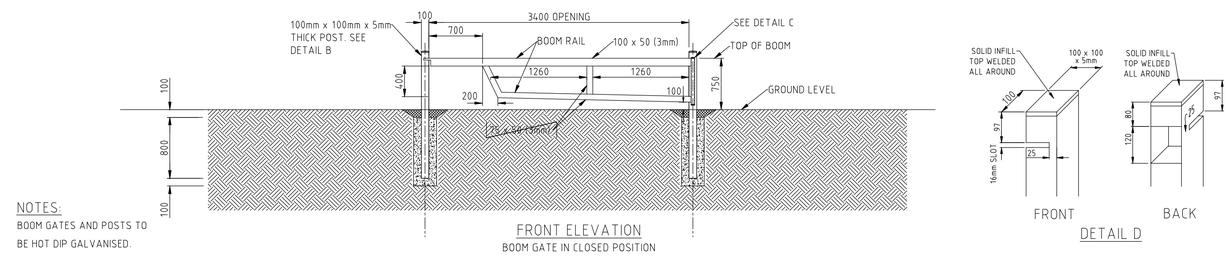
END POSTS

MIDDLE POSTS

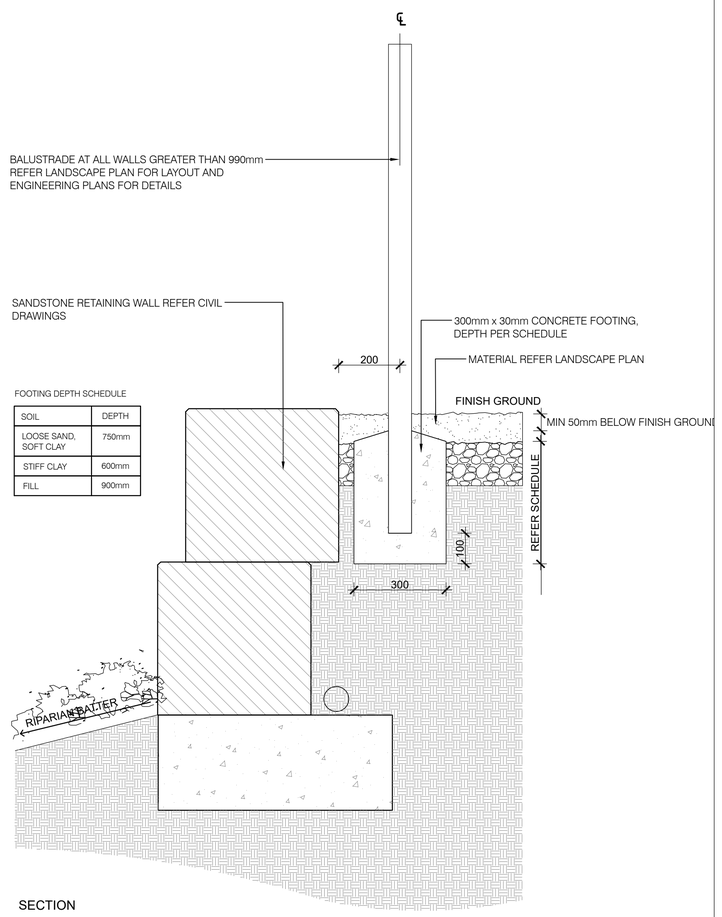
SECTION MIDDLE POST

1 TYPICAL HANDRAIL DETAIL
1:10





2 BOOM GATE BCC STANDARD DETAIL #A(BS)152M
1:20



FOOTING DEPTH SCHEDULE

SOIL	DEPTH
LOOSE SAND, SOFT CLAY	750mm
STIFF CLAY	600mm
FILL	900mm

3 LAYOUT OF BALLUSTRADE AT POCKET PARKS
1:10

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admin@pdsdesign.com.au
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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

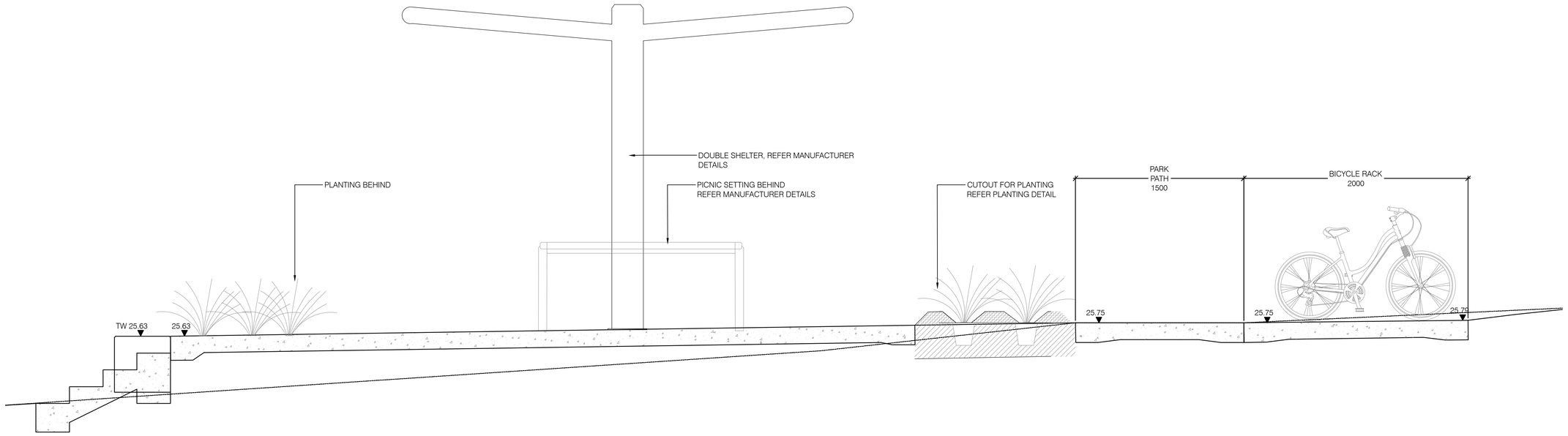
CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
REACH 2

DRAWING TITLE
HANDRAIL AND GATE DETAILS

ISSUE: FOR CC
PROJECT NO.: -
SCALE:

DRAWING NO.: LA-450
REVISION: -



1 REFERENCE SECTION
1:20

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS REACH 2

DRAWING TITLE
REFERENCE SECTION

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-460

REVISION
-

ELARA P5 PARKLANDS: BASIN

LANDSCAPE WORKS
CONSTRUCTION CERTIFICATE

Landscape Drawing List

Drawing No.	Title
LA-100	COVER SHEET & CONTEXT PLAN
LA-101	SHEET REFERENCE PLAN
LA-102	LEGEND
LA-103	PLANT SCHEDULES
	LANDSCAPE
LA-200	LANDSCAPE PLAN
LA-201	LANDSCAPE PLAN
LA-201	LANDSCAPE PLAN
	ENLARGEMENTS
LA-300	POCKET PARKS
LA-301	PICNIC AREA & BOARDWALK
	DETAILS
LA-400	SITE FURNITURE
LA-410	HARDSCAPE
LA-430	PLANTING DETAILS
LA-431	TREE PLANTING DETAILS
LA-433	WETLAND PLANTING DETAILS
LA-440	WALLS & STAIRS
LA-450	HANDRAIL & GATE DETAILS
LA-460	REFERENCE SECTIONS
	SPECIFICATIONS
LA-500	LANDSCAPE SPECIFICATIONS

N

1 CONTEXT PLAN
NTS

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
COVER SHEET & CONTEXT PLAN

ISSUE FOR CC
PROJECT NO. -

SCALE NA

DRAWING NO. LA-100
REVISION -

1 SHEET REFERENCE PLAN

NTS

Paterson Design Studio

Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)

Paterson Design Studio PTY. LTD
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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
SHEET REFERNCE PLAN

ISSUE
FOR CC

PROJECT NO.
-

SCALE
NA

N

DRAWING NO.
LA-101

REVISION
-

LEGEND

EXTENT OF WORKS

JOINLINE

100 YEAR FLOOD LEVEL

EDGES

E1	CONCRETE EDGE	2 / LA410
E2	TREATED PINE EDGE	2 / 430 · 3 / 431
RB	ROOT BARRIER	4 / LA410

WALLS & STAIRS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO / DWG
W3	CONCRETE CHEEK WALL REFER DETAIL & SPEC	NO / DWG
	STAIRS Arrow indicates up	

OTHER STRUCTURES

	BOULDERS REFER CIVIL	
	INFORMAL SANDSTONE LOG CROSSINGS	1 / 440
	ANCHORED HABITAT TREE LOG	3 / 432
GPT	GPT REFER CIVIL DWG	

FINISHES

Refer to Schedule of Landscape Works

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 / LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 / LA410
P3	GRAVEL PAVING	3 / LA410
P4	BOARDWALK DECKING BY OTHERS Refer structural dwg	

PLANTING

Refer to Schedule of Landscape Works

+	PROPOSED TREE PER SCHEDULE	1,2,3 / 431
1	TURF PER SCHEDULE	1 / 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 / 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
5	DAM PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
6	RAINGARDEN PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

GRADING

Refer to Schedule of Landscape Works

EX 0.000	EXISTING LEVEL
0.000	FINISHED SURFACE LEVEL
TW 0.000	TOP OF WALL LEVEL
BW 0.000	BOTTOM OF WALL LEVEL
TK 0.000	TOP OF KERB LEVEL
	RAMP arrow indicates up
FALL 1:20	DIRECTION AND GRADIENT of surface fall
2.0%	CROSS FALL
	BATTER

FURNITURE

Refer to Schedule of Landscape Works

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 / LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 / LA400
F3	F3 - BIKE RACK Manufacturer: HUB Product: BCC - PARK SUIT	8 / LA400
F4	F4 - FURNITURE TYPE 4 BBQ	
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 / LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 / LA400
F8	F8 - INFORMAL SEATING LOG SUPPLIED & INSTALLED BY OTHERS	

BOLLARDS

B1	B1 - FIXED BOLLARD	1 / LA400
B2	B2 - REMOVABLE BOLLARD	1 / LA400
B3	B3 - FIXED BOLLARD IN VERGE	2,3 / LA400

HANDRAILS & BALUSTRADES

	H1 - HANDRAIL	1 / LA4XX
	H2 - BALUSTRADE	3 / LA4XX

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 / LA4XX

EXERCISE EQUIPMENT

E1	E1 - COMBI 2 Manufacturer: KOMPAN Product: FSW10200-0901
E2	E2 - PARALLEL BARS Manufacturer: KOMPAN Product: FSW20100-0901
E3	E3 - MAGNETIC BELLS Manufacturer: KOMPAN Product: FAZ10200-0900
E4	E4 - STEP 20CM Manufacturer: KOMPAN Product: FAZ30100-0900
E5	E5 - STEP 40CM Manufacturer: KOMPAN Product: FAZ30200-0900
E6	E6 - STEP 60CM Manufacturer: KOMPAN Product: FAZ30300-0900
E7	E7 - SUSPENSION TRAINER Manufacturer: KOMPAN Product: FAZ10100
E8	E8 - COMBI 1 Manufacturer: KOMPAN Product: FSW10100

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BLA (CANB) MLAUD (HARV)
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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
LEGEND

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-102

REVISION
-

STREET TREES IN VERGE

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Ang flo	*Angophora floribunda*	100L	as shown	2.50	40mm	2x50x50x1800mm KDHW posts	**161**

TREES IN PARKLAND

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Ang cos	*Angophora costata*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**4**
Ang flo	*Angophora floribunda*	45L	as shown	2.50	40mm	2x50x50x1800mm KDHW posts	**3**
Ang sub	*Angophora subvelutina*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**22**
Bra pop	*Brachychiton populneus*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**8**
Cor cit	*Corymbia citriodora*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**30**
Cor mac	*Corymbia maculata*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**120**
Euc amp	*Eucalyptus amplifolia*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**55**
Euc bot	*Eucalyptus botryoides*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**55**
Euc cre	*Eucalyptus crebra*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**81**
Euc eug	*Eucalyptus eugenioides*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**12**
Euc pun	*Eucalyptus punctata*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**4**
Euc ter	*Eucalyptus tereticornis*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**30**
Fic rub	*Ficus rubiginosa*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**4**
Mel qui	*Melaleuca quinquenervia*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**129**

MASSPLANTING IN VERGE

TUFTED GRASSES

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Car app	*Carex appressa*	Hiko/tube	6 per M2	n/a	n/a	n/a	**3919**
Dia lon	*Dianella longifolia*	Hiko/tube	6 per M2	n/a	n/a	n/a	**480**
Imp cyl	*Imperata cylindra*	Hiko/tube	6 per M2	n/a	n/a	n/a	**615**
Iso nod	*Isolepis nodosa*	Hiko/tube	6 per M2	n/a	n/a	n/a	**4316**
Jun usi	*Juncus usitatua*	Hiko/tube	6 per M2	n/a	n/a	n/a	**4293**
Lom tan	*Lomandra tanika*	Hiko/tube	6 per M2	n/a	n/a	n/a	**3168**
Poa lab	*Poa labillardieri*	Hiko/tube	6 per M2	n/a	n/a	n/a	**4305**
The aus	*Themeda australis*	Hiko/tube	6 per M2	n/a	n/a	n/a	**4293**

POCKET PARK PLANT LISTS

TREES

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Ang sub	*Angophora subvelutina*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**3**
Euc amp	*Eucalyptus amplifolia*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**3**
Mel qui	*Melaleuca quinquenervia*	45L	as shown	2.50	40mm	2x 50x50x1800mm KDHW posts	**5**

TUFTED GRASSES

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Car app	*Carex appressa*	Hiko/tube	6 per M2	n/a	n/a	n/a	**67**
Dia rev	*Dianella revoluta*	Hiko/tube	6 per M2	n/a	n/a	n/a	**64**
Iso nod	*Isolepis nodosa*	Hiko/tube	6 per M2	n/a	n/a	n/a	**59**
Jun usi	*Juncus usitatua*	Hiko/tube	6 per M2	n/a	n/a	n/a	**57**
Lom tan	*Lomandra tanika*	Hiko/tube	6 per M2	n/a	n/a	n/a	**89**
Poa lab	*Poa labillardieri*	Hiko/tube	6 per M2	n/a	n/a	n/a	**57**
The aus	*Themeda australis*	Hiko/tube	6 per M2	n/a	n/a	n/a	**103**

RAINGARDEN PLANTING

CODE	BOTANTICAL NAME	POT SIZE	DENSITY	HEIGHT	CALIPER	STAKING	TOTAL
Car app	*Carex appressa*	Hiko/tube	6 per M2	n/a	n/a	n/a	**7620**
Fic nod	*Ficinia nodosa*	Hiko/tube	6 per M2	n/a	n/a	n/a	**7620**
Jun usi	*Juncus usitatua*	Hiko/tube	6 per M2	n/a	n/a	n/a	**7620**

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REV	NO	DESCRIPTION	DWN	CHK	DATE
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CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
PLANT SCHEDULES

ISSUE FOR CC
PROJECT NO. -
SCALE

DRAWING NO. LA-103
REVISION -

LEGEND

EXTENT OF WORKS

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 LA410
P3	GRAVEL PAVING	3 LA410

EDGES

E1	CONCRETE EDGE	2 LA410
E2	TREATED PINE EDGE	2 430
RB	ROOT BARRIER	4 LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO DWG
W3	CONCRETE CHEEK WALL REFER DETAIL & SPEC	NO DWG

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 431
1	TURF PER SCHEDULE	1 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
5	DAM PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
6	RAINGARDEN PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FURNITURE

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 LA400
F3	F3 - BIKE RACK Manufacturer: HUB Product: BCC - PARK SUIT	8 LA400
F4	F4 - FURNITURE TYPE 4 BBQ	
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 LA400

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 LA4XX

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

DRAFT

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
LANDSCAPE PLAN

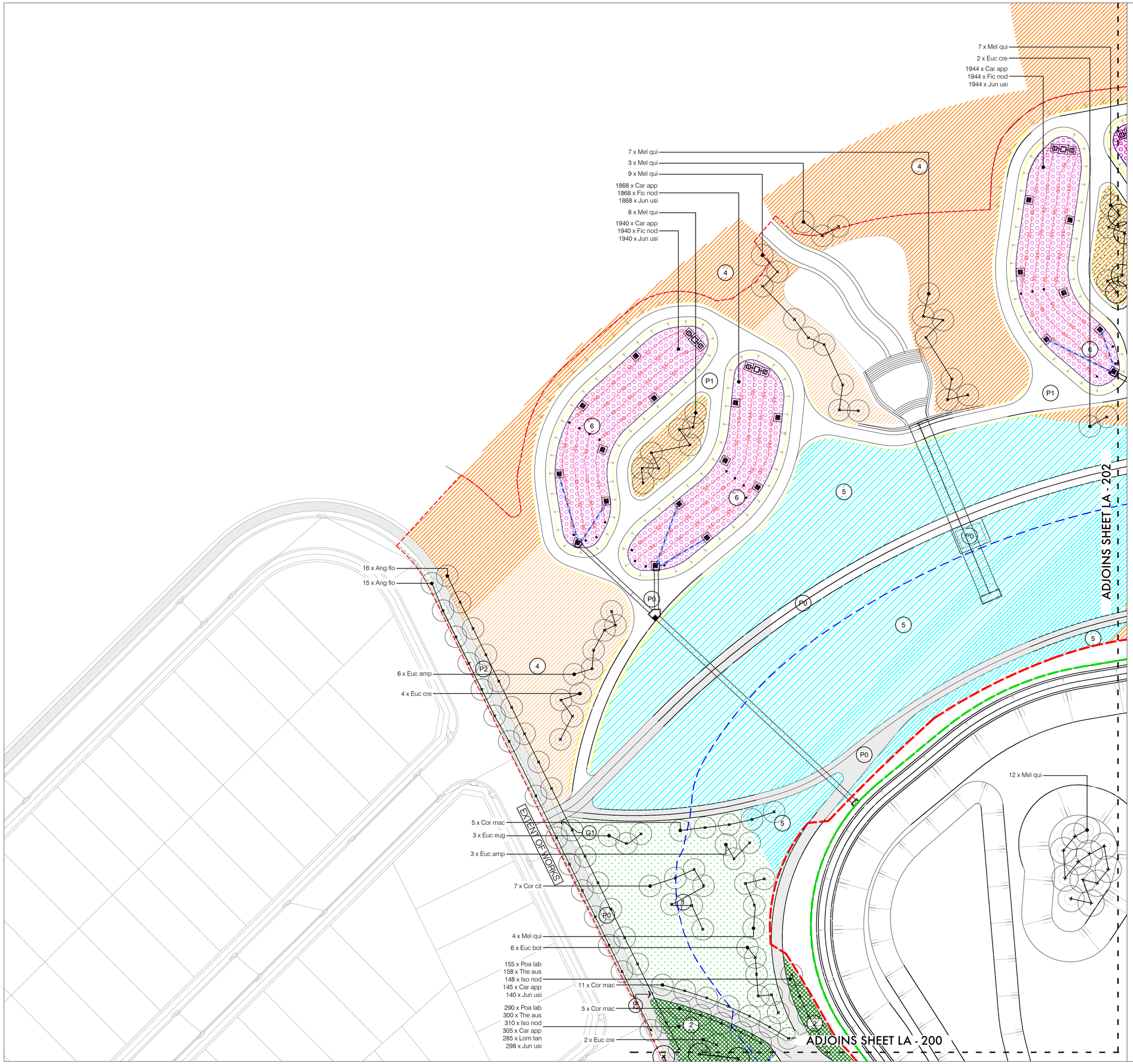
ISSUE
FOR CC

PROJECT NO.
-

SCALE
1:500 @ A1 1:1000 @ A3
0 5 10 15 20 25[m]

DRAWING NO.
LA-200

REVISION
-



LEGEND

EXTENT OF WORKS

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 / LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 / LA410
P3	GRAVEL PAVING	3 / LA410

EDGES

E1	CONCRETE EDGE	2 / LA410
E2	TREATED PINE EDGE	2 / 430
RB	ROOT BARRIER	4 / LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO / DWG
W3	CONCRETE CHEEK WALL REFER DETAIL & SPEC	NO / DWG

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 / 431
1	TURF PER SCHEDULE	1 / 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 / 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
5	DAM PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
6	RAINGARDEN PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FURNITURE

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 / LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 / LA400
F3	F3 - BIKE RACK Manufacturer: HUB Product: BCC - PARK SUIT	8 / LA400
F4	F4 - FURNITURE TYPE 4 BBQ	
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 / LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 / LA400

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 / LA4XX

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

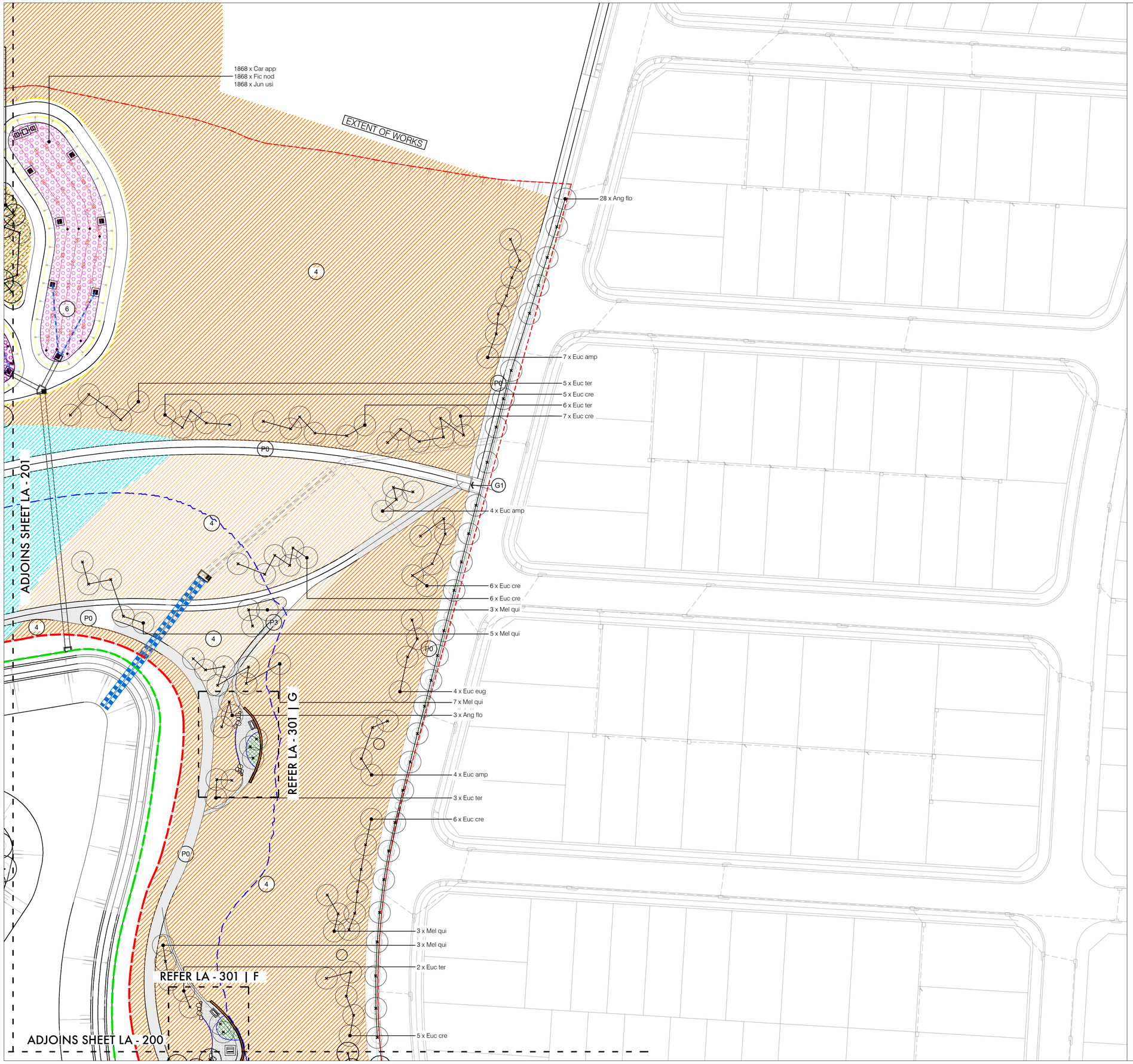
PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
LANDSCAPE PLAN

ISSUE: FOR CC
PROJECT NO.: -

SCALE: 1:500 @ A1 1:1000 @ A3
0 5 10 15 20 25[m]
N

DRAWING NO.: LA-201
REVISION: -



LEGEND

EXTENT OF WORKS

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 / LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 / LA410
P3	GRAVEL PAVING	3 / LA410

EDGES

E1	CONCRETE EDGE	2 / LA410
E2	TREATED PINE EDGE	2 / 430
RB	ROOT BARRIER	4 / LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO / DWG
W3	CONCRETE CHEEK WALL REFER DETAIL & SPEC	NO / DWG

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 / 431
1	TURF PER SCHEDULE	1 / 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 / 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
5	DAM PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
6	RAINGARDEN PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FURNITURE

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 / LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 / LA400
F3	F3 - BIKE RACK Manufacturer: HUB Product: BCC - PARK SUIT	8 / LA400
F4	F4 - FURNITURE TYPE 4 BBQ	
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 / LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 / LA400

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 / LA4XX

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
LANDSCAPE PLAN

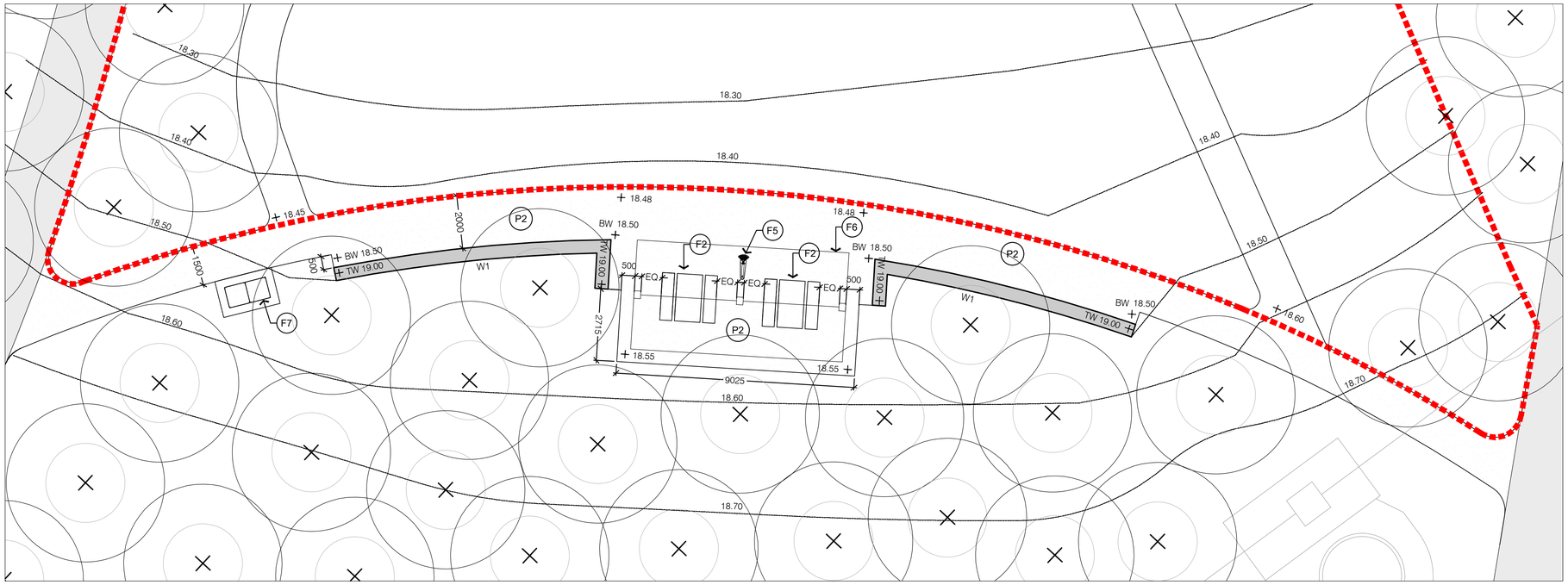
ISSUE
FOR CC

PROJECT NO.
-

SCALE
1:500 @ A1 1:1000 @ A3
0 5 10 15 20 25[m]
N

DRAWING NO.
LA-202

REVISION
-



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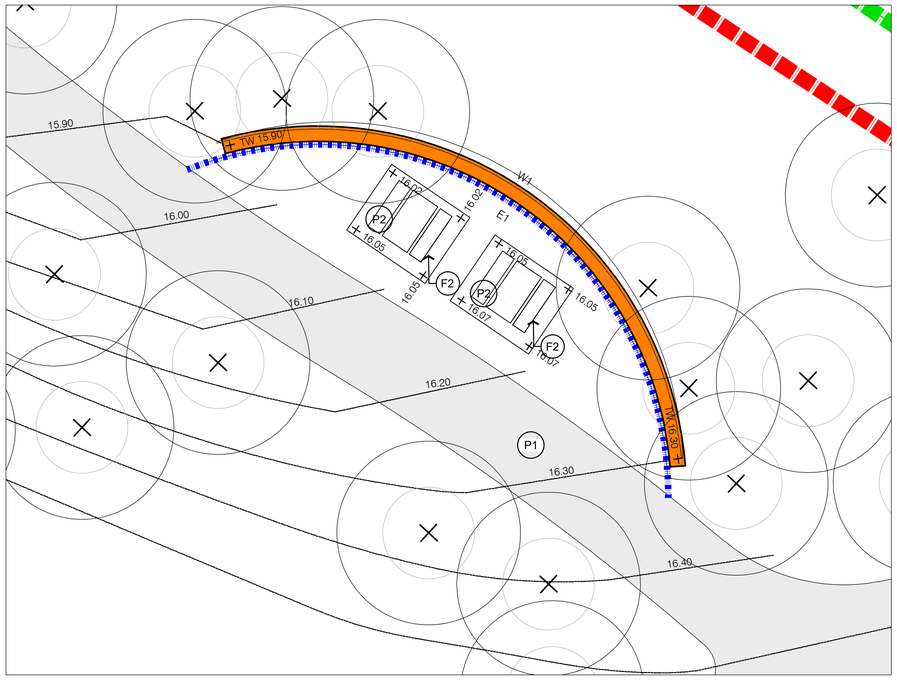
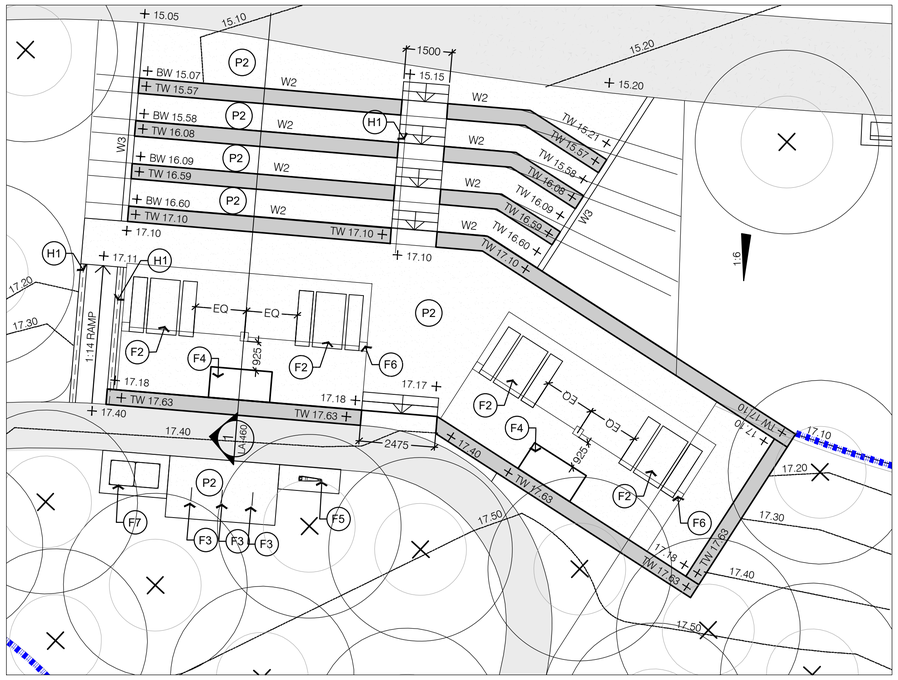
SCALE 1:100 @ A1



ENLARGEMENT AREA - B
SCALE 1:100 @ A1



ENLARGEMENT AREA - C
SCALE 1:100 @ A1

LEGEND

EXTENT OF WORKS

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 LA410
P3	GRAVEL PAVING	3 LA410

EDGES

E1	CONCRETE EDGE	2 LA410
E2	TREATED PINE EDGE	2 430
RB	ROOT BARRIER	4 LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO DWG
W3	CONCRETE CHEEK WALL REFER DETAIL & SPEC	NO DWG

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 431
1	TURF PER SCHEDULE	1 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
5	DAM PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
6	RAINGARDEN PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FURNITURE

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 LA400
F3	F3 - BIKE RACK Manufacturer: HUB Product: BCC - PARK SUIT	8 LA400
F4	F4 - FURNITURE TYPE 4 BBQ	
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 LA400

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 LA4XX

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

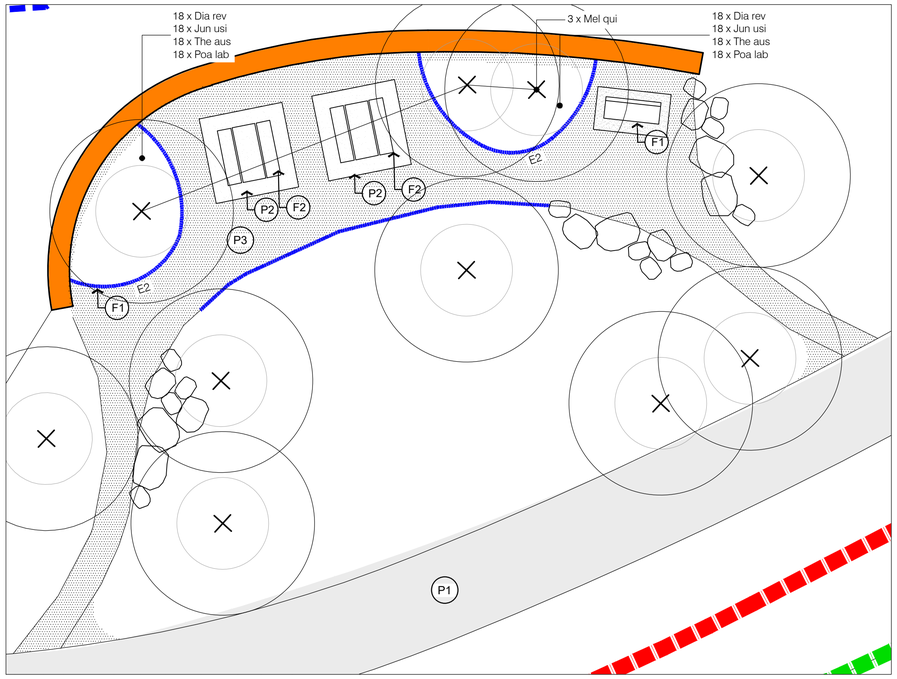
PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
ENLARGEMENT POCKET PARKS

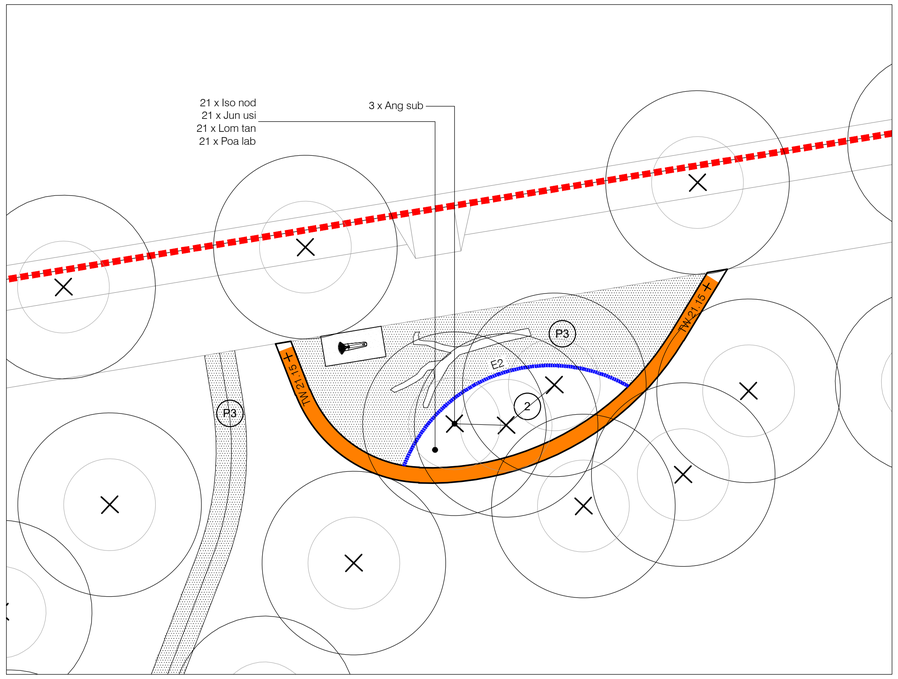
ISSUE FOR CC
PROJECT NO. -

SCALE 1:100 @ A1 1:200 @ A3
0 1 2 3 4 5[m]
N

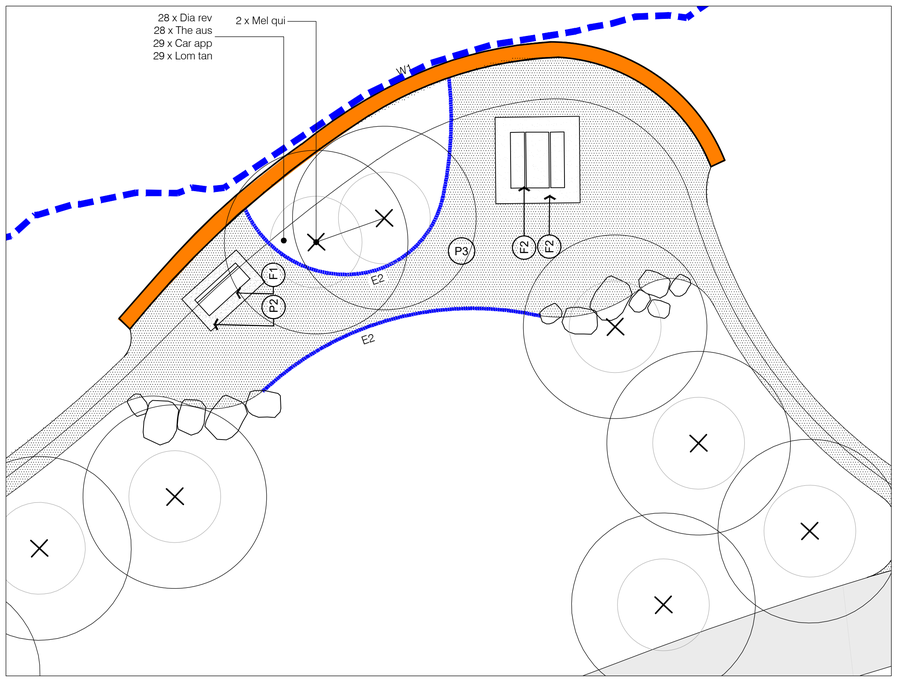
DRAWING NO. LA-300
REVISION -



ENLARGEMENT AREA - D
SCALE 1:100 @ A1



ENLARGEMENT AREA - E
SCALE 1:100 @ A1



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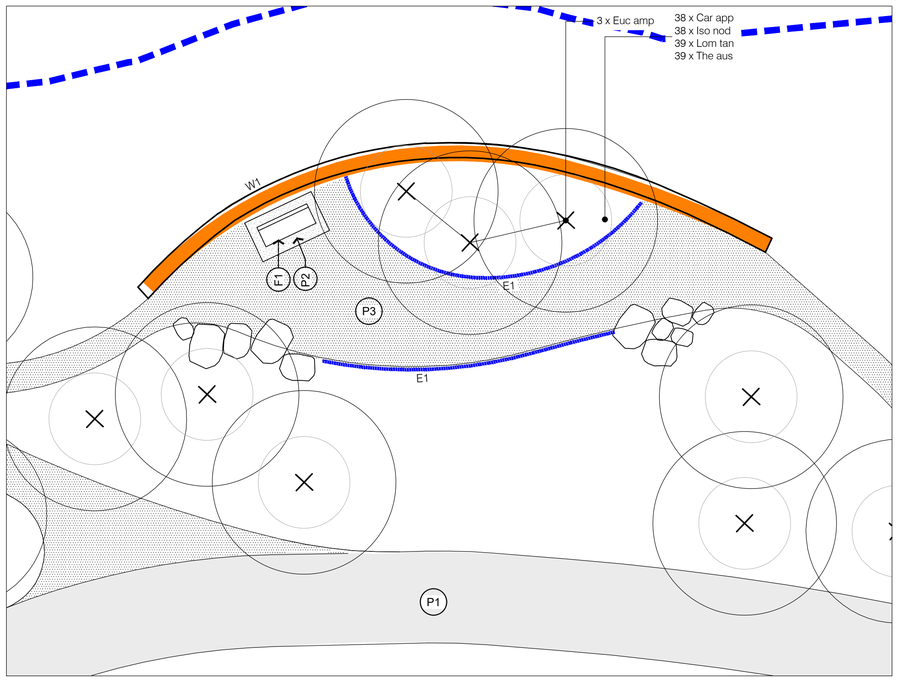
SCALE 1:100 @ A1



ENLARGEMENT AREA - G
SCALE 1:100 @ A1

LEGEND

EXTENT OF WORKS

100 YEAR FLOOD LEVEL

HARDSCAPE

P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 / LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 / LA410
P3	GRAVEL PAVING	3 / LA410

EDGES

E1	CONCRETE EDGE	2 / LA410
E2	TREATED PINE EDGE	2 / 430
RB	ROOT BARRIER	4 / LA410

WALLS

W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO DWG
W3	CONCRETE CHEEK WALL REFER DETAIL & SPEC	NO DWG

PLANTING

+	PROPOSED TREE PER SCHEDULE	1,2,3 / 431
1	TURF PER SCHEDULE	1 / 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 / 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
5	DAM PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
6	RAINGARDEN PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO DWG
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FURNITURE

F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 / LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 / LA400
F3	F3 - BIKE RACK Manufacturer: HUB Product: BCC - PARK SUIT	8 / LA400
F4	F4 - FURNITURE TYPE 4 BBQ	
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 / LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 / LA400

FENCE/GATES

G1	G1 - MAINTENANCE GATE	2 / LA4XX

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
ENLARGEMENT POCKET PARKS

ISSUE
FOR CC

PROJECT NO.
-

SCALE
1:100 @ A1 1:200 @ A3
0 1 2 3 4 5[m]

N

DRAWING NO.
LA-301

REVISION
-

LEGEND

Symbol	Description	Detail
	EXTENT OF WORKS	
	100 YEAR FLOOD LEVEL	

HARDSCAPE

Symbol	Description	Detail
P0	CONCRETE PAVEMENT BY OTHERS Refer Civil	
P1	CONCRETE PAVEMENT VEHICULAR Refer Civil	1 / LA410
P2	CONCRETE PAVEMENT NON VEHICULAR	1 / LA410
P3	GRAVEL PAVING	3 / LA410

EDGES

Symbol	Description	Detail
E1	CONCRETE EDGE	2 / LA410
E2	TREATED PINE EDGE	2 / 430
RB	ROOT BARRIER	4 / LA410

WALLS

Symbol	Description	Detail
W1	SANDSTONE BLOCK WALL BY CIVIL	
W2	SANDSTONE BLOCK WALL REFER DETAIL & SPEC	NO / DWG
W3	CONCRETE CHEEK WALL REFER DETAIL & SPEC	NO / DWG

PLANTING

Symbol	Description	Detail
+	PROPOSED TREE PER SCHEDULE	1,2,3 / 431
1	TURF PER SCHEDULE	1 / 430
2	PARKLAND MASS PLANTING PER SCHEDULE	2 / 430
3	WETLAND PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
4	RIPARIAN BATTER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
5	DAM PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
6	RAINGARDEN PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	NO / DWG
7	CREEK CHANNEL PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
8	CREEK PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	1,2 / 432
9	SHOULDER PLANTING PER SCHEDULE (6 HIKO PLANTS PER M2)	

FURNITURE

Symbol	Description	Detail
F1	F1 - BENCH SEAT Manufacturer: HUB Product: BCC - PARK SUIT Double line indicates back of seat	4 / LA400
F2	F2 - PICNIC TABLE Manufacturer: HUB Product: BCC - PARK SUITE	6 / LA400
F3	F3 - BIKE RACK Manufacturer: HUB Product: BCC - PARK SUIT	8 / LA400
F4	F4 - FURNITURE TYPE 4 BBQ	
F5	F5 - DRINKING FOUNTAIN Manufacturer: HUB Product: BCC - PARK SUIT	7 / LA400
F6	F6 - SHELTER Manufacturer: HUB Product: BCC - PARK SUIT	
F7	F7 - BIN Manufacturer: HUB Product: BCC - PARK SUIT	5 / LA400

FENCE/GATES

Symbol	Description	Detail
G1	G1 - MAINTENANCE GATE	2 / LA4XX

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
ENLARGEMENT PICNIC AREA & BOARDWALK

ISSUE FOR CC
PROJECT NO. -

SCALE 1:200 @ A1 1:400 @ A3
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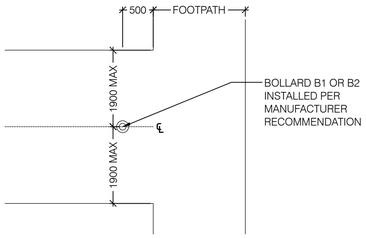
DRAWING NO. LA-302
REVISION -



1 B1 / B2 - TYPICAL REMOVABLE BOLLARD LAYOUT DETAIL
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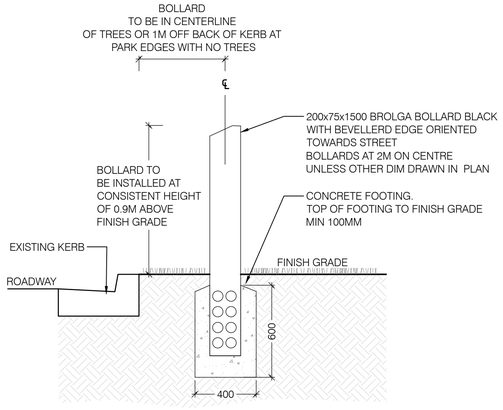
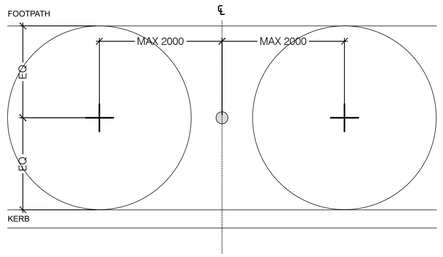
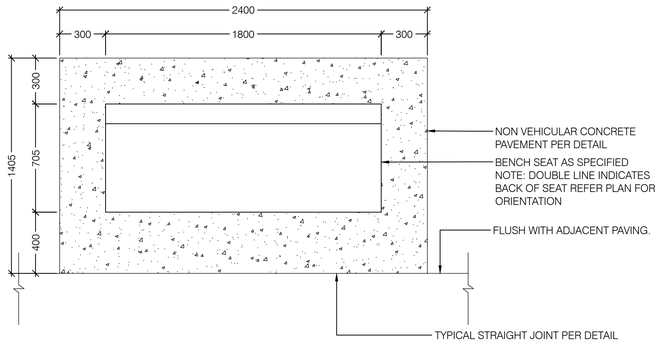


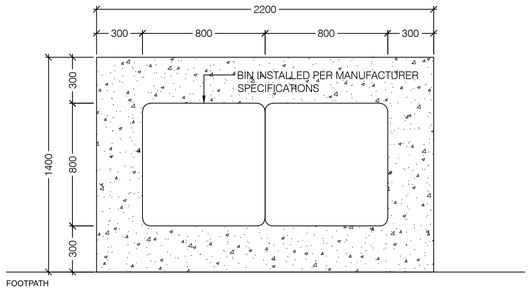
2 B3 - FIXED BOLLARD IN VERGE
1:20



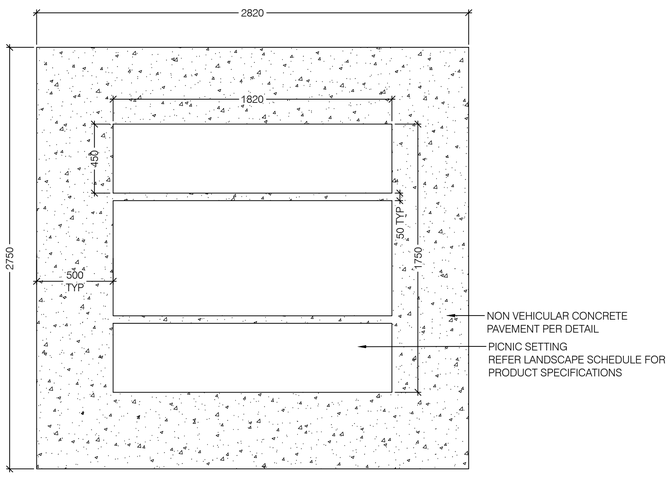
3 B3 - FIXED BOLLARD IN VERGE LAYOUT
1:50



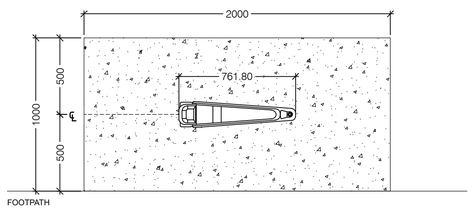
4 F1 - TYPICAL BENCH LAYOUT ON CONCRETE PAD
1:20



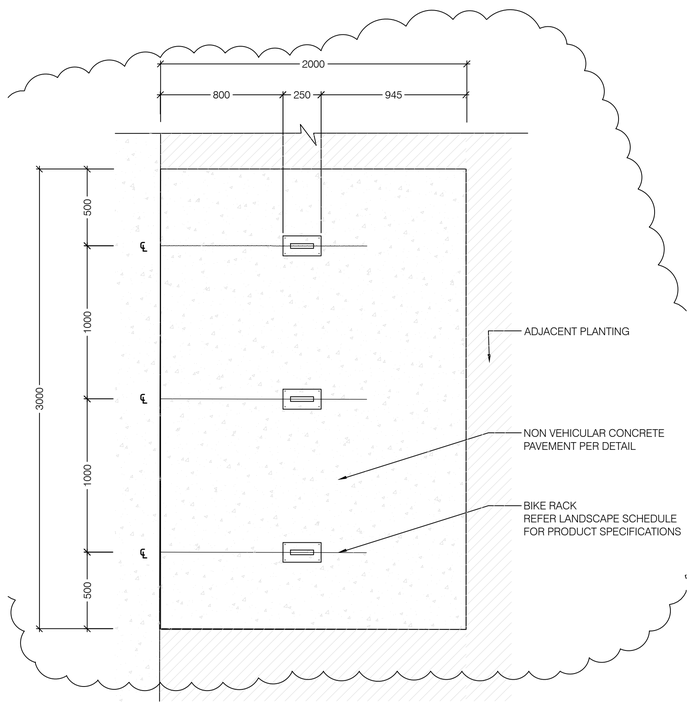
5 F7 - TYPICAL BIN LAYOUT ON CONCRETE PAD
1:20



6 LAYOUT OF PICNIC SETTING ON CONCRETE PAD
1:20



7 F5 - TYPICAL DRINKING FOUNTAIN ON CONCRETE PAD
1:20



8 BIKE RACK LAYOUT DETAIL
1:20

Paterson
Design
Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
SITE FURNITURE

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-400

REVISION
-

JOINT SEALANT:
10MM WIDE X 15MM DEEP EXPANDITE 'THIOFLEX 600' JOINT SEALANT RECESSED WITH POLYETHYLENE TAPE BOND BREAKER OR APPROVED EQUIVALENT, PLACE TAPE AFTER IDES OF RECESS HAVE BEEN PRIMED FOR SEALANT.

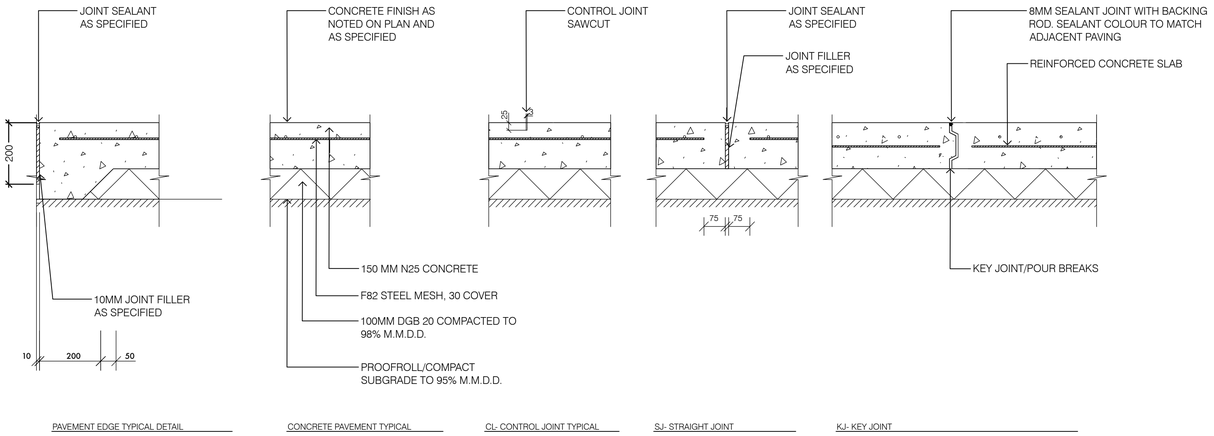
JOINT FILLER:
10MM THICK EXPANDITE 'FLEXCELL' COMPRESSIBLE FILLER BOARD, OR APPROVED EQUIVALENT.

NOTE:
CONCRETE AS PER BCC PATH PAVING POLICY AND BCC ENGINEERING GUIDE FOR DEVELOPMENT 2005 WORKS SPECIFICATION

NOTE:
ENSURE DGB BASE IS SET 150MM BELOW JOINT LOCATION TO ENSURE THAT THERE ARE NO GAPS BETWEEN BOTTOM OF JOINT AND DGB LAYER

THICKNESS AND COLOUR OF TYPICAL PAVEMENT				
PAVEMENT	MM	COLOUR	FINISH	REINFORCEMENT
P1	125	GREY	BROOM	F82 STEEL MESH
P2	125	GREY	BROOM	N/A

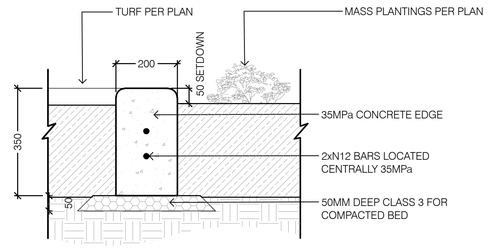
TYPICAL JOINT SPACING (unless other noted in plans)			
With of Path	KJ	SJ	JC
3.0m	6.1m	18.1m	3.05m
2.5m	6.1m	18.1m	3.05m
1.2m	3.0m	12.0m	1.5m



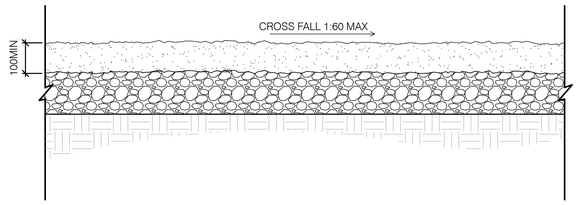
PAVEMENT EDGE TYPICAL DETAIL | CONCRETE PAVEMENT TYPICAL | CL- CONTROL JOINT TYPICAL | SJ- STRAIGHT JOINT | KJ- KEY JOINT

1 P1 & P2 CONCRETE PAVEMENT
1:10

NOTE: PROVIDE TOOLED JOINT AT 1M CENTRES TO 5mm DEPTH. EDGES CHAMFERED CONCRETE COLOUR TO MATCH ADJACENT PATHWAYS.

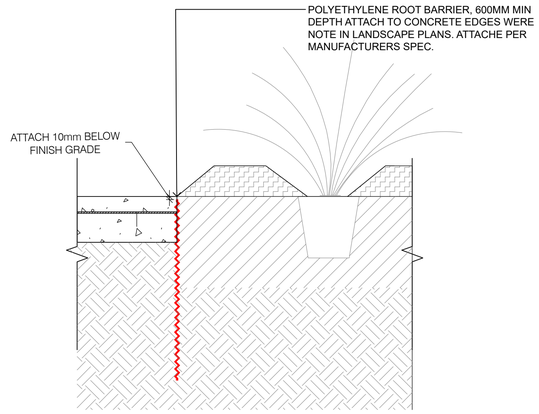


2 CONCRETE EDGER
1:10



NOTES
1) MIX 20:1 SELECTED NATURAL TONE SANDSTONE GRAVEL:CEMENT. CEMENT: TYPE GP TP AS 3972.
2) GRAVEL GRADING: MAXIMUM PARTICLE IZE 10mm, 30 - 40% PASSING 5mm SIEVE, OF UNIFORM COLOUR AND LOW PLASTICITY.
3) GRAVEL SOURCE AND COLOUR; BUFF ASS SUPPLIED BY ANL R APPROVED EQUIVALENT.
4) COMPACTION; COMPACT TO ACHIEVE A DRY DENSITY RATIO OF 95% WHEN TESTED TO AS 1289.5.4.1 (STANDART COMPACTION).

3 CRUSHED SANDSTONE GRAVEL PAVEMENT
1:10



4 STREET TREE IN VERGE
1:10

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
HARDSCAPE

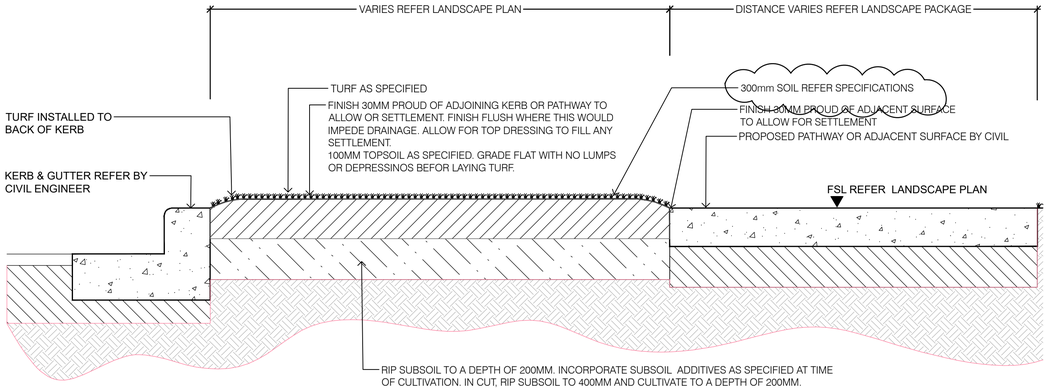
ISSUE
FOR CC

PROJECT NO.
-

SCALE

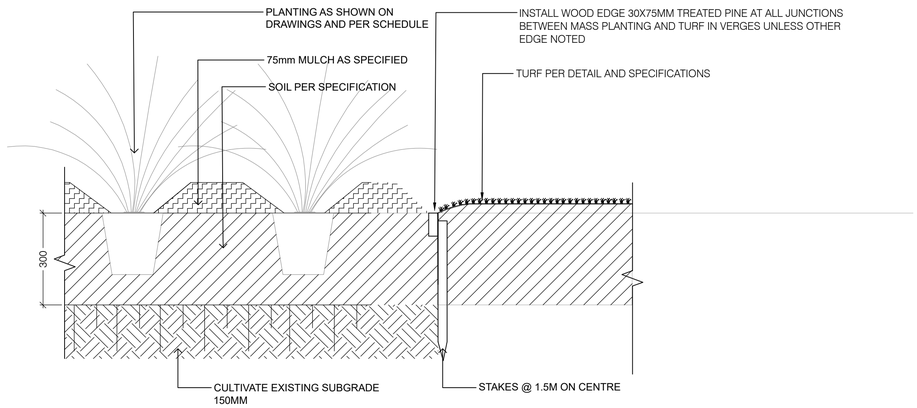
DRAWING NO.
LA-410

REVISION
-



NOTE:
ENSURE GROUND IS FREE FROM ANY CONTAMINATED MATERIALS DETRIMENTAL TO PLANT GROWTH.
PREVENT COMPACTION BY CONSTRUCTION PLANT.
COMPACT LIGHTLY AND UNIFORMLY IN 100MM LAYERS. TO PROVIDE A FINISHED SURFACE AT DESIGN LEVELS. SMOOTH AND FREE OF STONES OR LUMPS OF SOIL AND GRADED TO DRAIN FREELY WITHOUT PONDING TO CATCHMENT POINTS.

1 SITE PREPARATION TURF
1:10



2 MULCHED MASS PLANTING
1:10

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Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
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16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
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admin@pdsdesign.com.au
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CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
SOFTSCAPE
PLANTING DETAILS

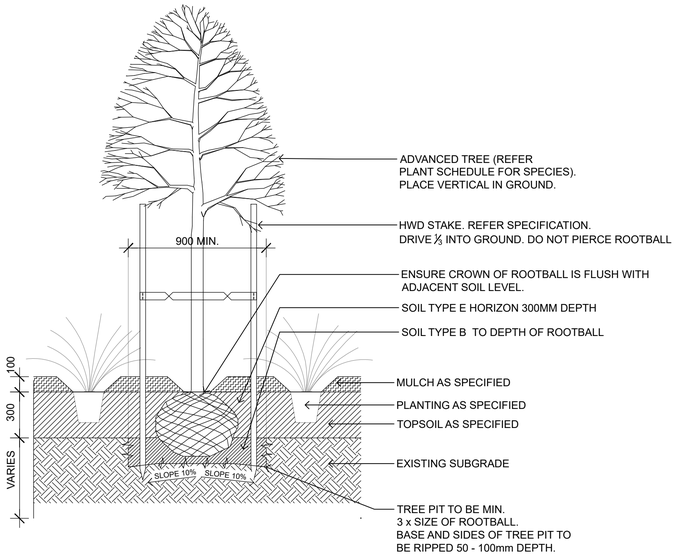
ISSUE
FOR CC

PROJECT NO.
-

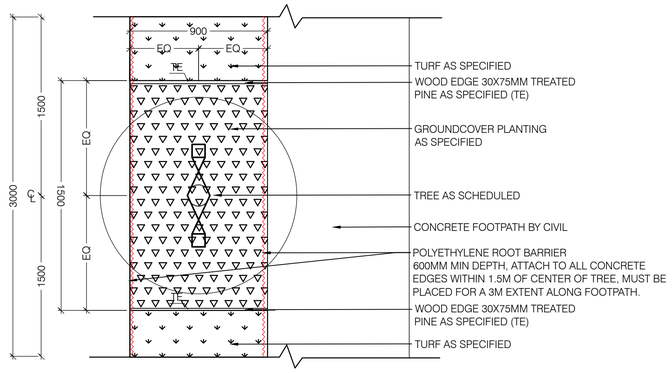
SCALE

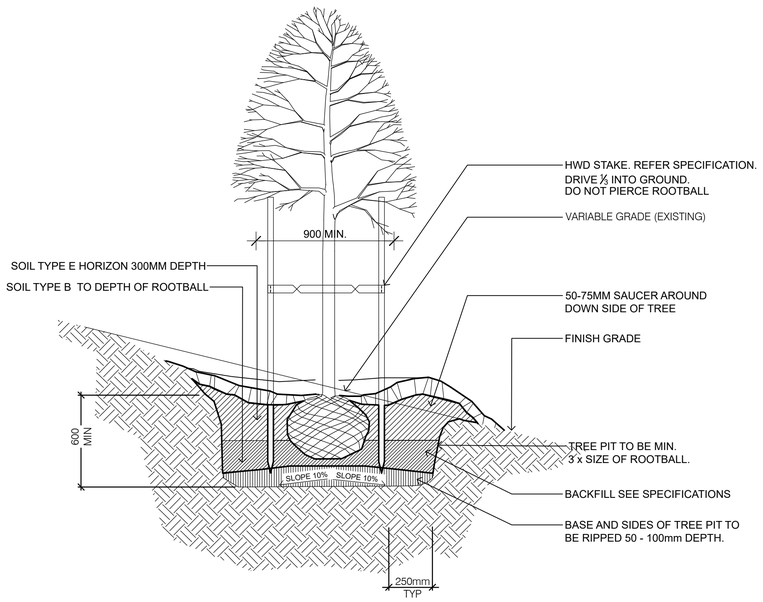
DRAWING NO.
LA 430

REVISION
-

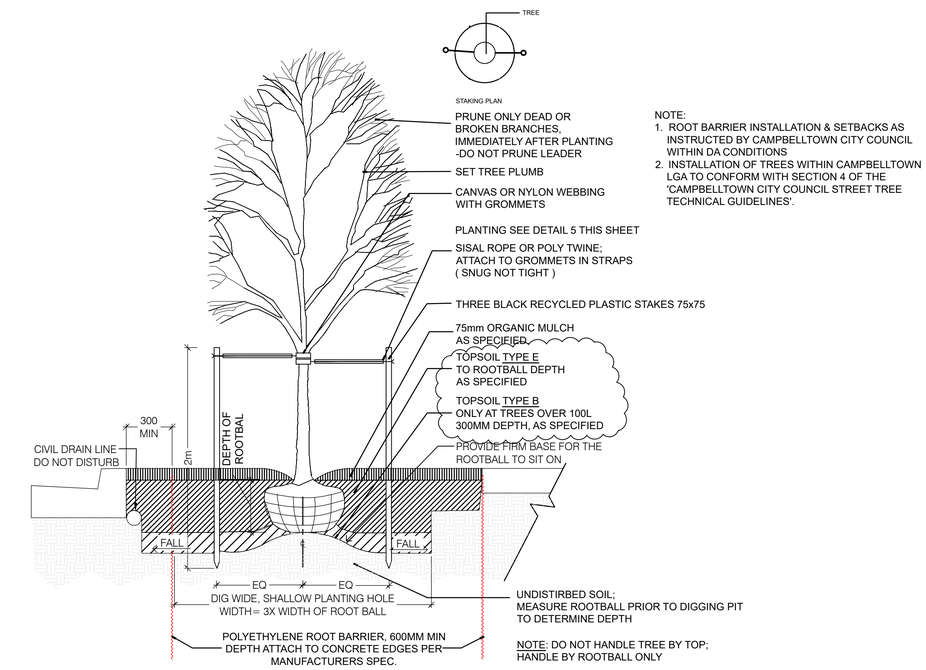


1 TREE IN MASSED PLANTING
1:20





2 TREE IN BATTER
1:20



NOTE:
1. ROOT BARRIER INSTALLATION & SETBACKS AS INSTRUCTED BY CAMPBELLTOWN CITY COUNCIL WITHIN DA CONDITIONS
2. INSTALLATION OF TREES WITHIN CAMPBELLTOWN LGA TO CONFORM WITH SECTION 4 OF THE 'CAMPBELLTOWN CITY COUNCIL STREET TREE TECHNICAL GUIDELINES'.

3 STREET TREE IN VERGE
1:20

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
SOFTSCAPE
TREE PLANTING DETAILS

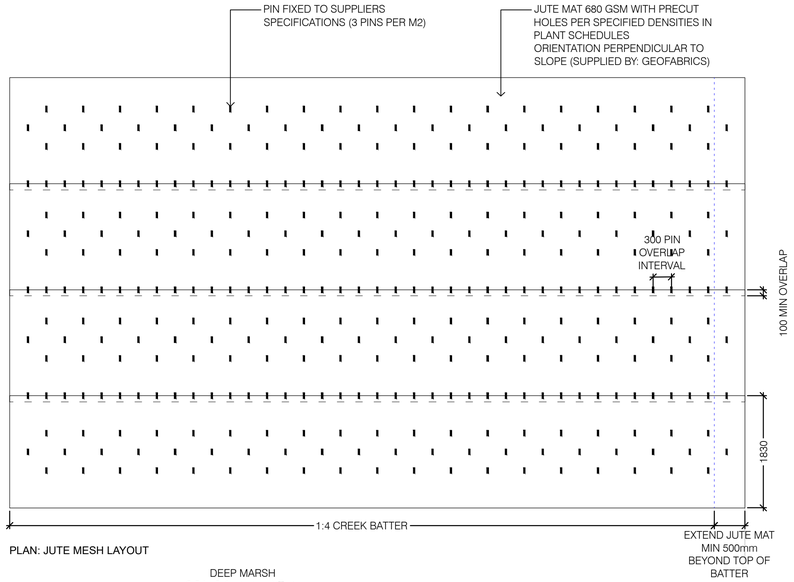
ISSUE
FOR CC

PROJECT NO.
-

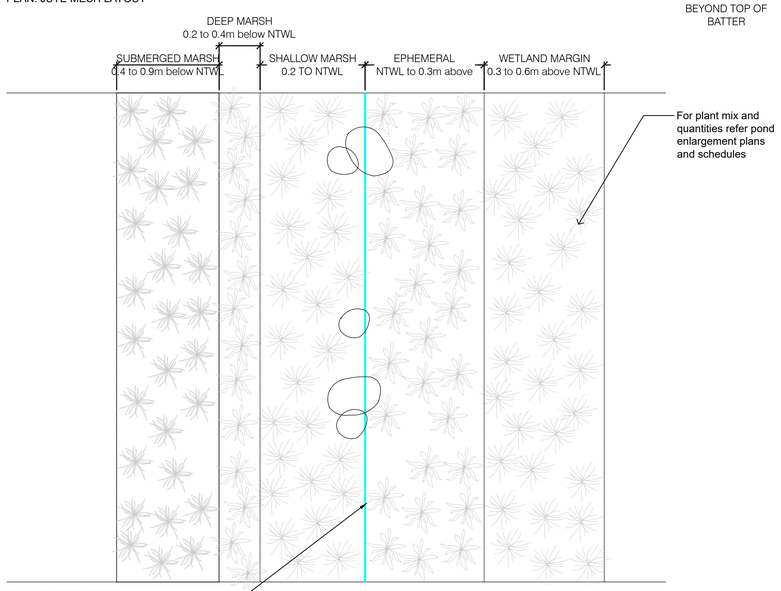
SCALE

DRAWING NO.
LA 431

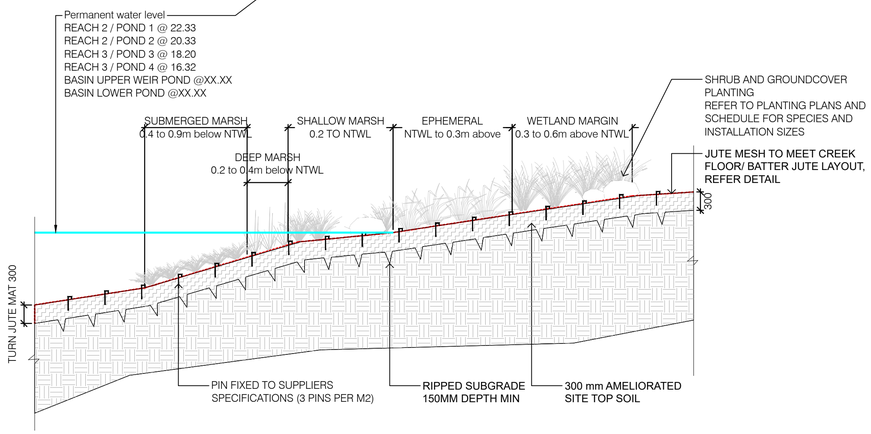
REVISION
-



PLAN: JUTE MESH LAYOUT



PLAN: PLANT LAYOUT



SECTION: PLANT LAYOUT & JUTE MESH

1 WETLAND PLANTING
1:50

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Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

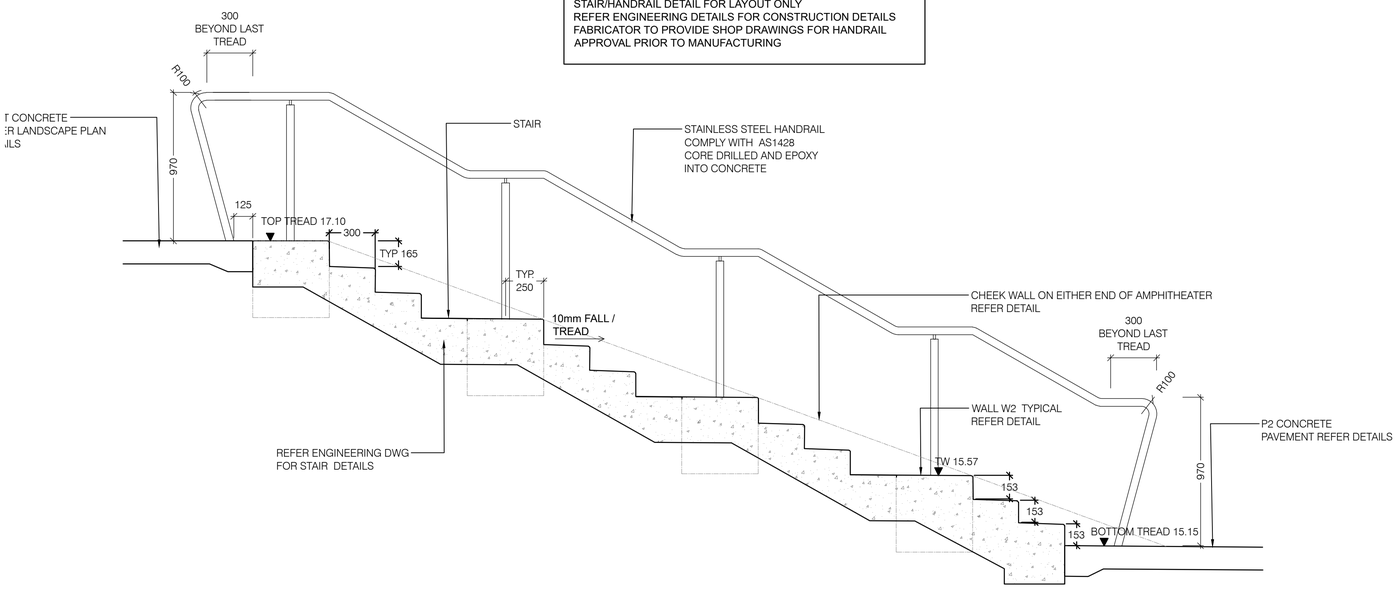
PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
SOFTSCAPE
WETLANS PLANTING DETAILS

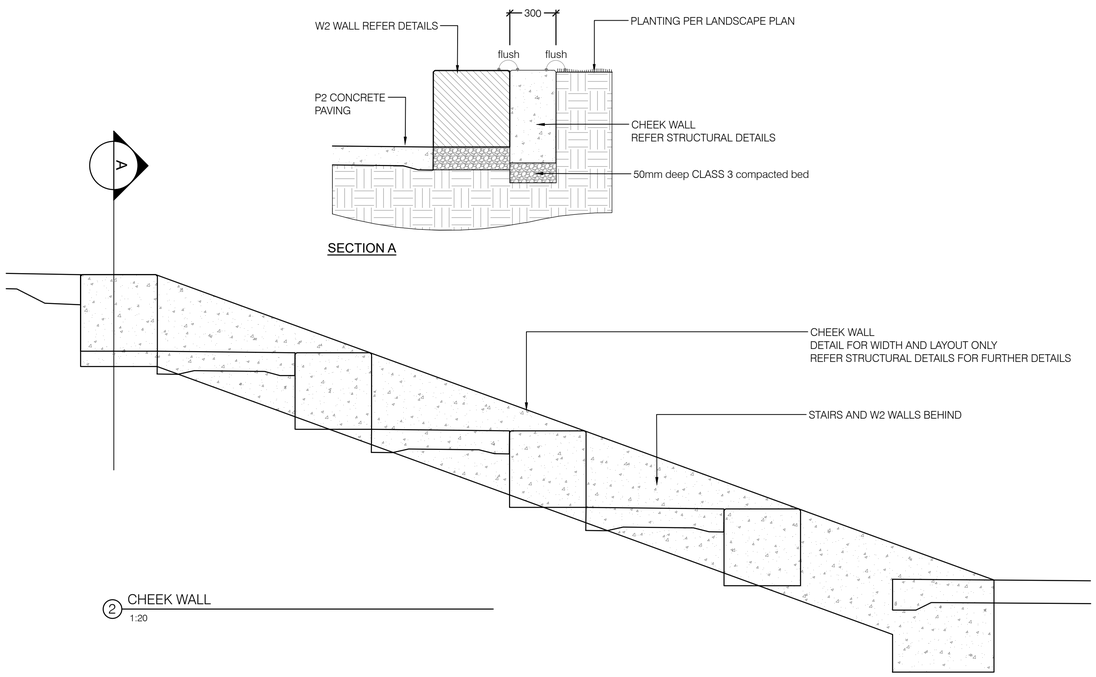
ISSUE: FOR CC
PROJECT NO.: -
SCALE

DRAWING NO.: LA 433
REVISION: -

NOTE:
STAIR/HANDRAIL DETAIL FOR LAYOUT ONLY
REFER ENGINEERING DETAILS FOR CONSTRUCTION DETAILS
FABRICATOR TO PROVIDE SHOP DRAWINGS FOR HANDRAIL
APPROVAL PRIOR TO MANUFACTURING



1 STAIRS AT BASIN AMPHEATRE
1:20



2 CHEEK WALL
1:20

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Design
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Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
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16a/1-15 Tramore Place
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admin@pdsdesign.com.au
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& PROJECT MANAGERS

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A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
WALLS AND STAIRS

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-440

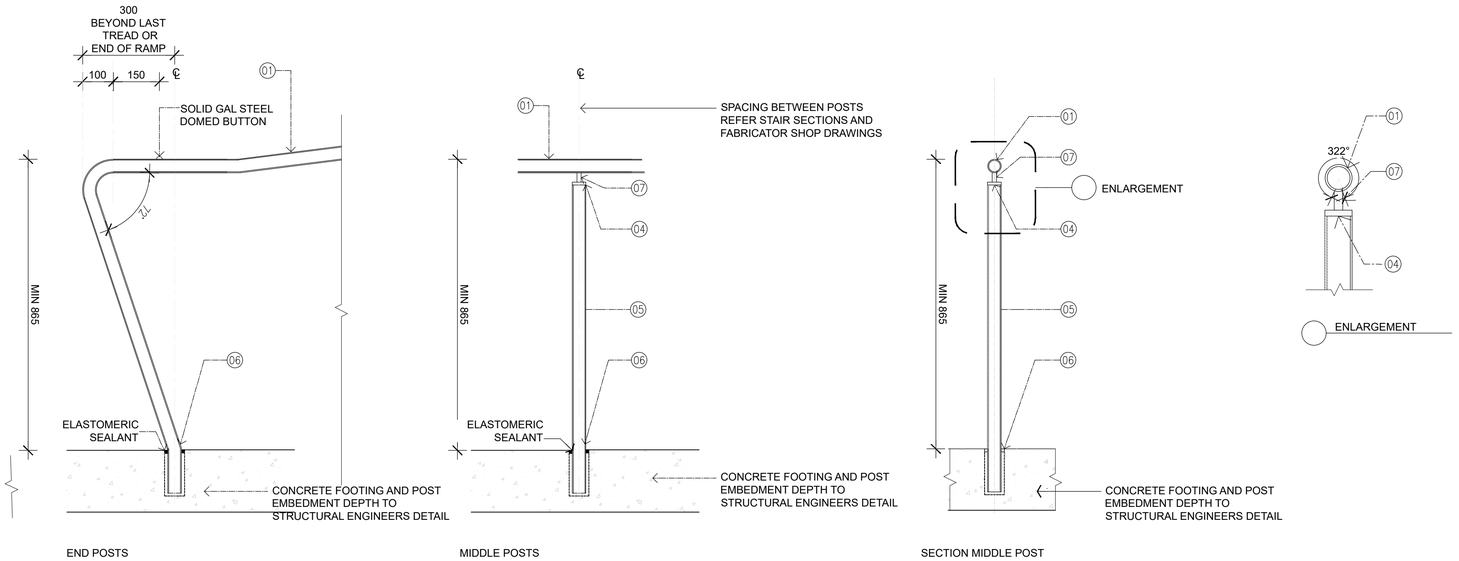
REVISION
-

LEGEND:

01. 44.3 OD X 3mm SS. CHS HANDRAIL. NO SITE WELDS
02. 15MM SOILD SS. MILD STEEL 'Y' FRAMED SPIGOT.
03. 20MM SOILD SS. MILD STEEL STEM
04. 10mm X 48.3Ø SS. MILD STEEL CAPPING TO TOP OF THE POST.
05. 48.3 OD X 4mm SS. CHS POST
06. 65mmØ CORE HOLE AND EMBED POST AT DEPTH TO STRUCTURAL ENGINEERS DETAIL WITH NON SHRINK GROUT
07. 14mm SOLID GAL. MILD SS SPIGOT

NOTES:

- NOM SIZES NOTED, REFER BCA/AUSTRALIAN STANDARDS AND ENGINEERS REQUIREMENTS.
- SHOP DRAWINGS REQUIRED

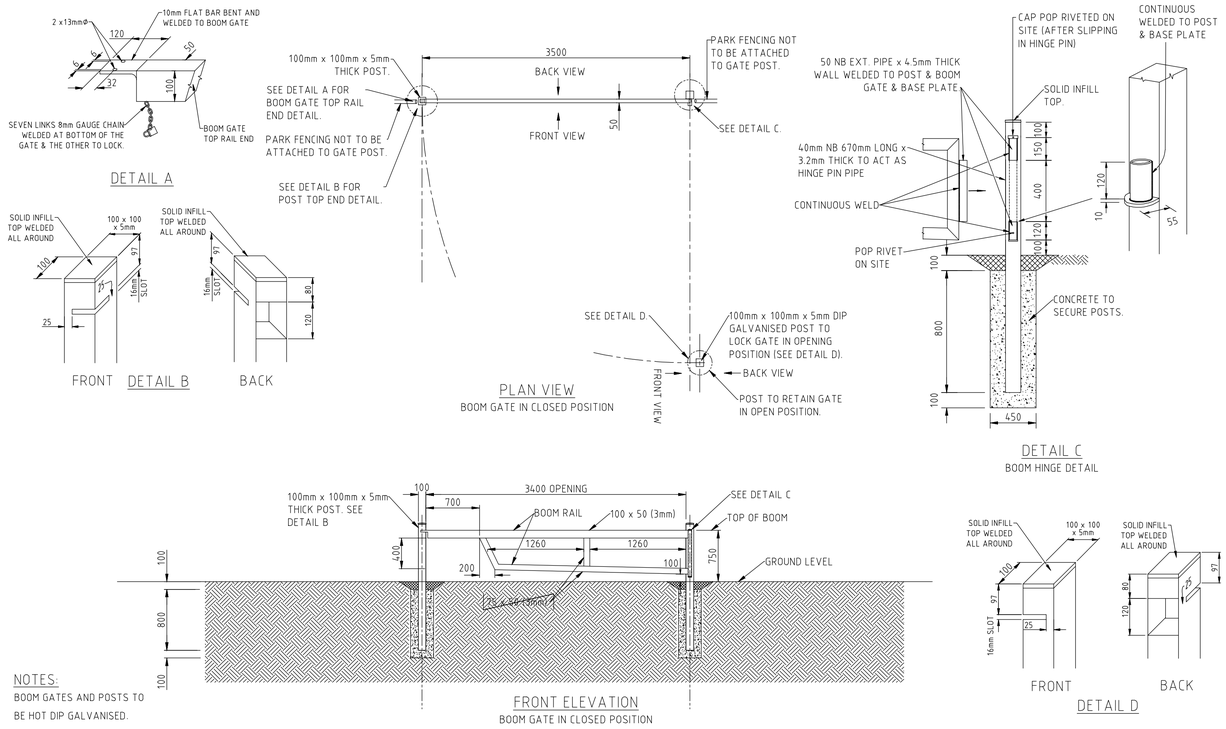


END POSTS

MIDDLE POSTS

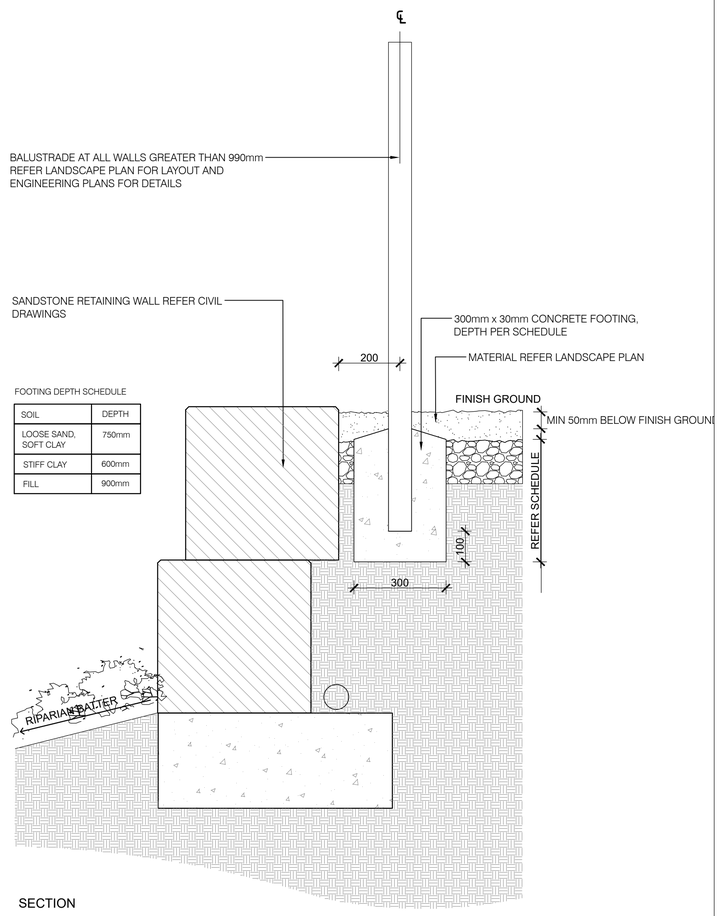
SECTION MIDDLE POST

1 TYPICAL HANDRAIL DETAIL
1:10



NOTES:
BOOM GATES AND POSTS TO BE HOT DIP GALVANISED.

2 BOOM GATE BCC STANDARD DETAIL #A(BS)152M
1:20



FOOTING DEPTH SCHEDULE

SOIL	DEPTH
LOOSE SAND, SOFT CLAY	750mm
STIFF CLAY	600mm
FILL	900mm

SECTION

3 LAYOUT OF BALLUSTRADE AT POCKET PARKS
1:10

Paterson Design Studio
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Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD 16a/1-15 Tramore Place Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

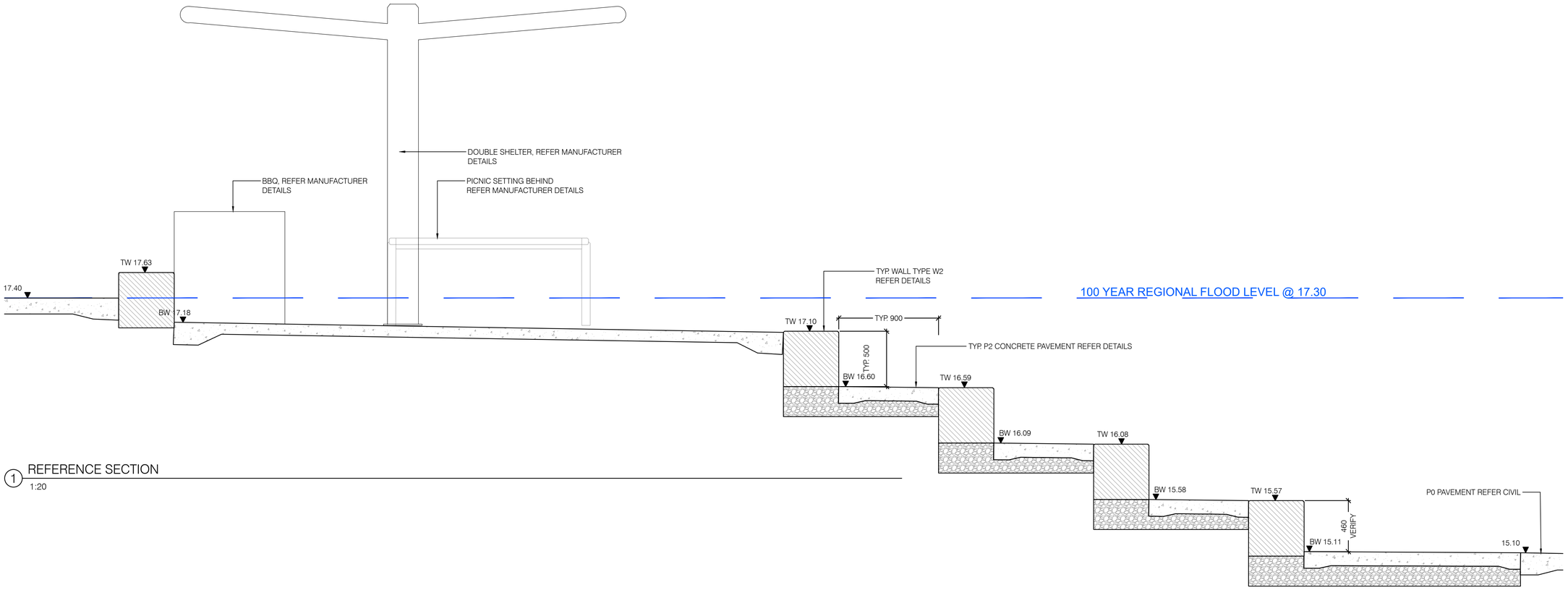
CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
HANDRAIL AND GATE DETAILS

ISSUE: FOR CC
PROJECT NO.: -
SCALE

DRAWING NO.: LA-450
REVISION: -



1 REFERENCE SECTION
1:20

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BLA (CANB) MLAUD (HARV)
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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS BASIN

DRAWING TITLE
REFERENCE SECTIONS

ISSUE
FOR CC

PROJECT NO.
-

SCALE

DRAWING NO.
LA-460

REVISION
-

ELARA P5 PARKLANDS

FURNITURE & EXERCISE EQUIPMENT

REACH 1 - 3 & BASIN

DRAWING No	TITLE
LA - 600	F1 - BENCH SEAT
LA - 601	F2 - PICNIC TABLE
LA - 602	F3 - BIKE RACK
LA - 603	F5 - DRINKING FOUNTAIN
LA - 604	F6 - SHELTER
LA - 605	F7 - BIN
LA - 607	B1/B3 - FIXED BOLLARD
LA - 608	E1 - COMBI 2
LA - 609	E2 - PARALLEL BARS
LA - 610	E3 - MAGNETIC BELLS
LA - 611	E4 - STEP 20CM
LA - 612	E5 - STEP 40CM
LA - 613	E6 - STEP 60CM
LA - 614	E7 - SUSPENSION TRAINER
LA - 615	E8 - COMBI 1

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
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admin@pdsdesign.com.au
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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE

ISSUE
FOR CC

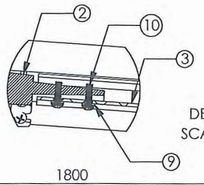
PROJECT NO.
-

SCALE

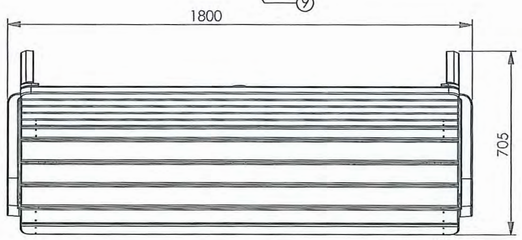
DRAWING NO.

REVISION
-

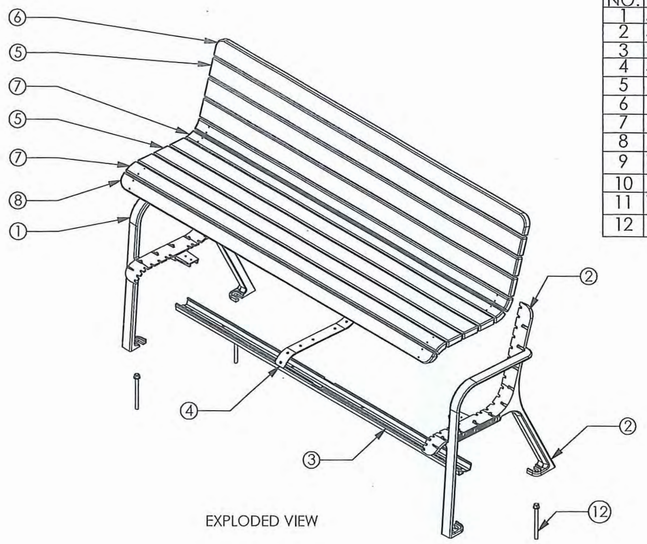
SECTION C-C



DETAIL D
SCALE 1 : 5

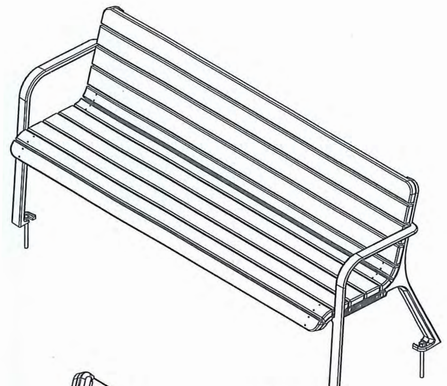


TOP VIEW



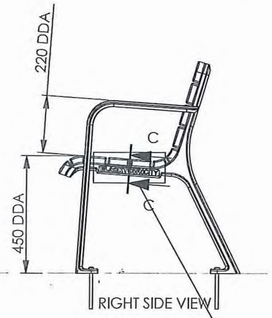
EXPLODED VIEW

PARTS LIST				
NO.	TITLE	MATERIAL	DRAWING #	QTY
1	Side Frame-Sand Cast-Left	Aluminium A356	9646-050	1
2	Side Frame-Sand Cast-Right	Aluminium A356	9646-050	1
3	Cross Brace-1800	Aluminium 6061 T1	9646-063	1
4	Seat Strap	Stainless Steel Grade 304	9646-060	1
5	Urban Slat-1800-Type A1	Select Grade Hardwood	9646-100	6
6	Urban Slat-1800-Type A2	Select Grade Hardwood	9646-101	1
7	Urban Slat-1800-Type B1	Select Grade Hardwood	9646-102	3
8	Urban Slat-1800-Type B2	Select Grade Hardwood	9646-103	1
9	Washer-Split-M6	Stainless Steel Grade 304	OEM	4
10	Button Head Socket Screw M6 x 20	Stainless Steel Grade 304	OEM	4
11	Wood Screw Button Head Phillips 12g x25	Stainless Steel Grade 304	OEM	55
12	HILTI HAS System-M12x160	OEM	OEM	4

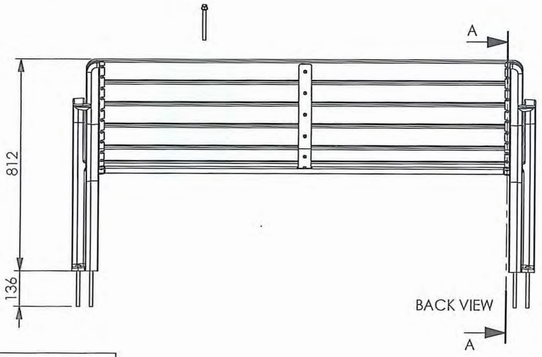


PICTORIAL A

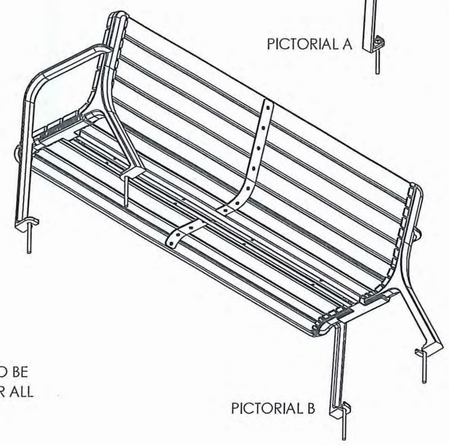
FRONT VIEW



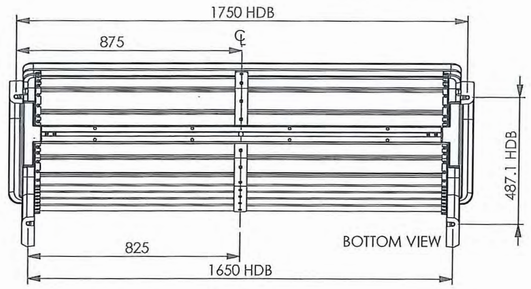
RIGHT SIDE VIEW



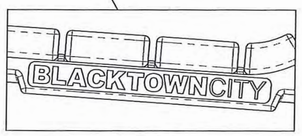
BACK VIEW



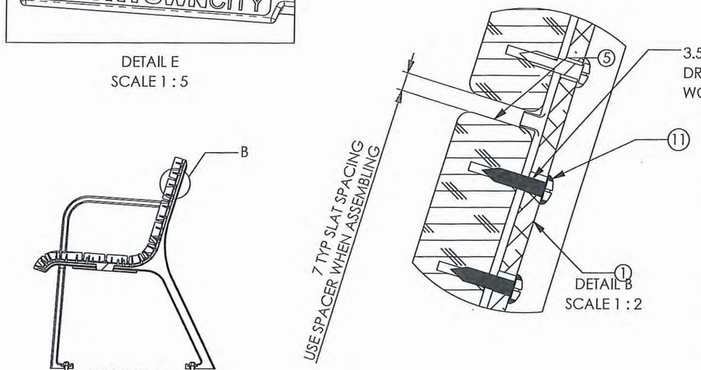
PICTORIAL B



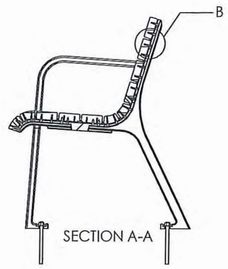
BOTTOM VIEW



DETAIL E
SCALE 1 : 5



DETAIL B
SCALE 1 : 2



SECTION A-A

GENERAL NOTES:

1. All dimensions in millimetres unless otherwise shown.
2. Tolerances
   -Linear dimension tolerances as specified on drawings. General tolerances are as follows:
   0.5mm - 6mm ± 0.1, 6mm - 30mm ± 0.2,
   30mm - 120mm ± 0.3,120mm - 400mm ± 0.5,
   400mm - 1000mm ± 0.8,1000mm - 2000mm ±1.2
   -Tolerances on all angular dimensions shall be as specified in drawings. General angular tolerances based on length of short side of angle are:
   >0 -10mm ± 1°,10mm - 50mm ± 0° 30',
   50mm - 120mm ± 0° 20',120mm - 400mm ± 0°10'
   -Holes and radii ± 0.5mm unless specified otherwise.
3. No deviation from drawing will be accepted without prior written approval.
4. Do not scale from drawings. Use dimensions provided if this is insufficient or ambiguous contact HUB for clarification

ASSEMBLY NOTES:

1. All fasteners to be included in supply of assembly unless otherwise indicated by HUB.
2. All surfaces to be free from marks and scratches.
3. Use a Nickle based anti-seizure lubricant between Stainless fixings and tapped Stainless Steel unless stated.
4. Predrill Wooden slats prior to screwing to avoid splitting

DESCRIPTION	DRAWN	DATE	CHECKED	DATE	CERTIFIED	DATE	REVISION
REVISED END FRAMES TO INCLUDE LOGO	JC	3/10/2017	-	-	-	-	C
Modified Parts		18/07/17	-	-	-	-	B
Initial Release		12/07/17	-	-	-	-	A

[HUB]
www.hub-group.com

Title: General Assembly
Dwg No: 9646-010
Product: Urban Seat 1800 Sand Cast
Project No: 9646
Material: Refer to parts list
Date Drawn: 12/07/17
Finish: Refer to Parts List
Scale: 1:20
Part Location:
Part Name:
Weight: - kg
A3

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Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
F1 - BENCH SEAT

ISSUE: FOR CC
PROJECT NO.: -
SCALE: NTS
DRAWING NO.: LA-600
REVISION: -

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
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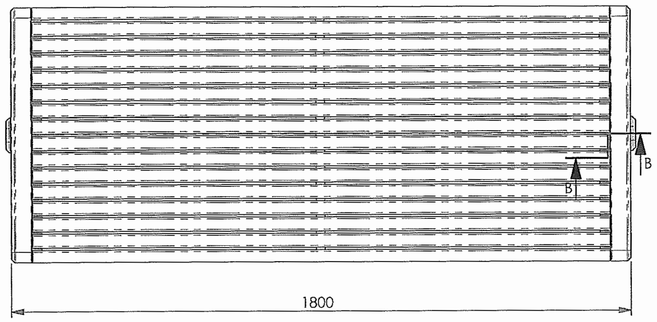
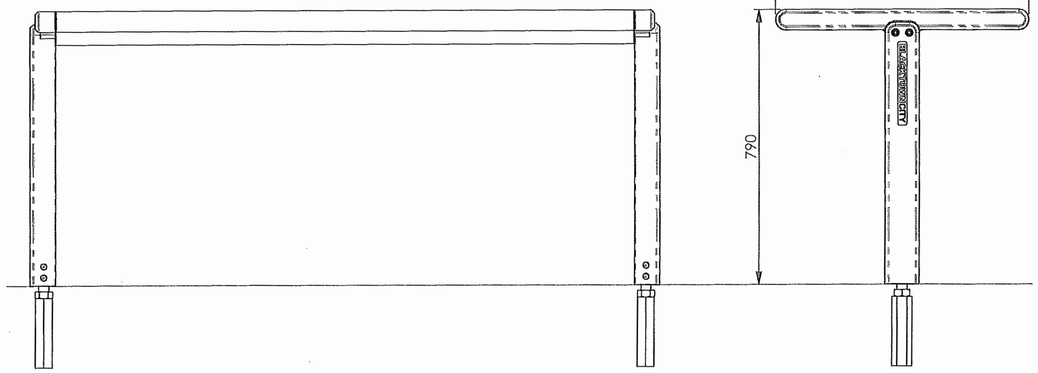
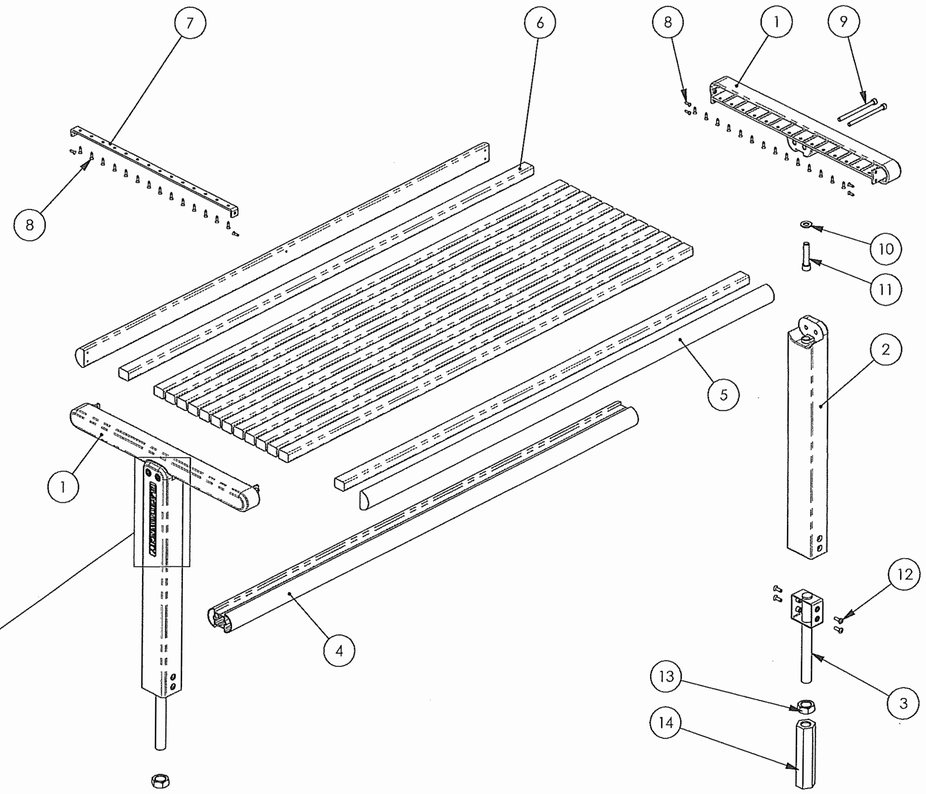
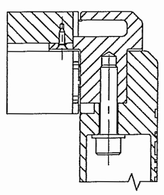
ITEM	TITLE	DRG No	MATERIAL	QTY
1	PICNIC TABLE CAST END FRAME	9646-835	ALUMINIUM - A356-T6	2
2	LONG CAST LEG	9646-836	ALUMINIUM - A356-T6	2
3	FABRICATED FOOT	9646-813	Q245 STEEL	2
4	CROSS BRACE	9646-816	ALUMINIUM 6061-T6	1
5	BULLNOSE SLAT	9646-819	HARDWOOD TIMBER	2
6	40 x 30 SLAT	9646-818	HARDWOOD TIMBER	14
7	PICNIC TABLE SLAT STRAP	9646-837	STAINLESS STEEL - 316	1
8	12g x 1.0" SELF TAPPING TIMBER SCREW	-	STAINLESS STEEL - 316	52
9	M10 x 140 SHCS	-	STAINLESS STEEL - 316	4
10	M16 WASHER - NARROW	-	STAINLESS STEEL - 316	2
11	M16 x 70 SHCS	-	STAINLESS STEEL - 316	2
12	M8 x 20 COUNTERSUNK SECURITY SCREW	-	STAINLESS STEEL - 316	8
13	M30 HEX NUT	-	ZINC PLATED	2
14	EMBEDDED MOUNT	9646-840	Q245 STEEL	2

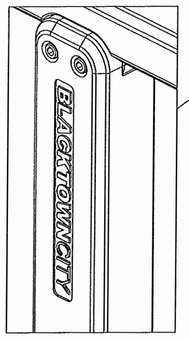








SECTION B-B
SCALE 1 : 5



DETAIL C
SCALE 1 : 5

GENERAL NOTES:
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DESCRIPTION	DRAWN	DATE	CHECKED	DATE	CERTIFIED	DATE	REVISION
REVISED TO INCLUDE LOGO	JC	3/10/2017	-	-	-	-	C
DRG UPDATED TO SHOW CAST LETTERING ON LEGS	JC	28/09/2017	-	-	-	-	B
Initial Release	JC	18/07/2017	-	-	-	-	A

[HUB]
www.hub-group.com

Title: PICNIC TABLE GENERAL ASSEMBLY
Dwg No: 9646-838
Product: BCC - PARK SUITE
Project No: 9646
Material:
Date Drawn: 18/07/2017
Finish:
Scale: 1:15 UNO
Part Location:
Part Name:
Weight:
A3

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

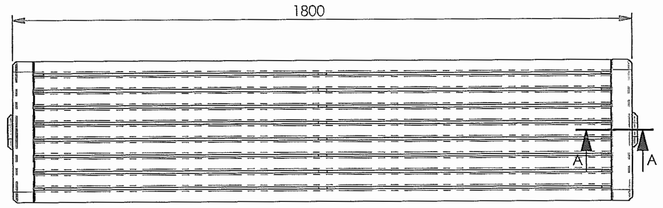
DRAWING TITLE
F2 - PICNIC TABLE

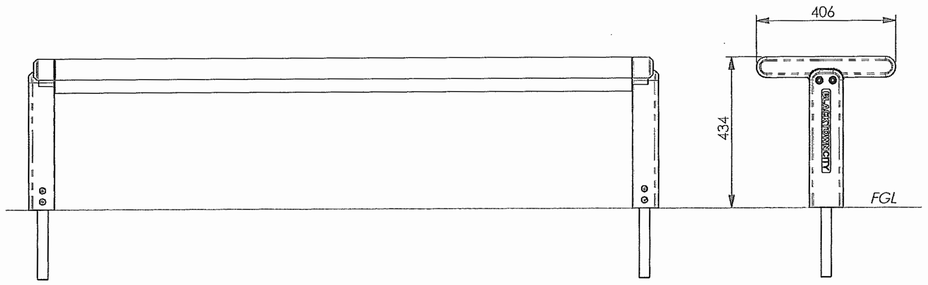
ISSUE: FOR CC
PROJECT NO.: -

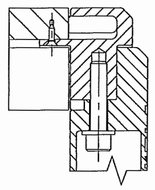
SCALE: NTS

DRAWING NO.: LA-601
REVISION: -

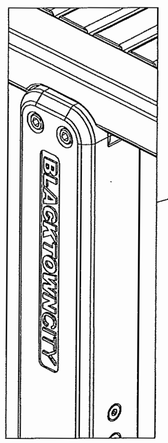
ITEM	TITLE	DRG No.	MATERIAL	QTY
1	PICNIC BENCH CAST END FRAME	9646-831	ALUMINIUM A356-T6	2
2	STANDARD LEG	9646-823	ALUMINIUM A356-T6	2
3	FABRICATED FOOT	9646-813	Q245 STEEL	2
4	PICNIC BENCH SLAT STRAP	9646-832	STAINLESS STEEL 316	1
5	CROSS BRACE	9646-816	ALUMINIUM 6061-T6	1
6	40 x 30 SLAT	9646-818	HARDWOOD TIMBER	7
7	BULLNOSE SLAT	9646-819	HARDWOOD TIMBER	2
8	12g x 1.0" SELF TAPPING TIMBER SCREW	-	STAINLESS STEEL 316	31
9	M10 x 140 SHCS	-	STAINLESS STEEL 316	4
10	M16 WASHER - NARROW	-	STAINLESS STEEL 316	2
11	M16 x 70 SHCS	-	STAINLESS STEEL 316	2
12	M8 x 20 COUNTERSUNK SECURITY SCREW	-	STAINLESS STEEL 316	8



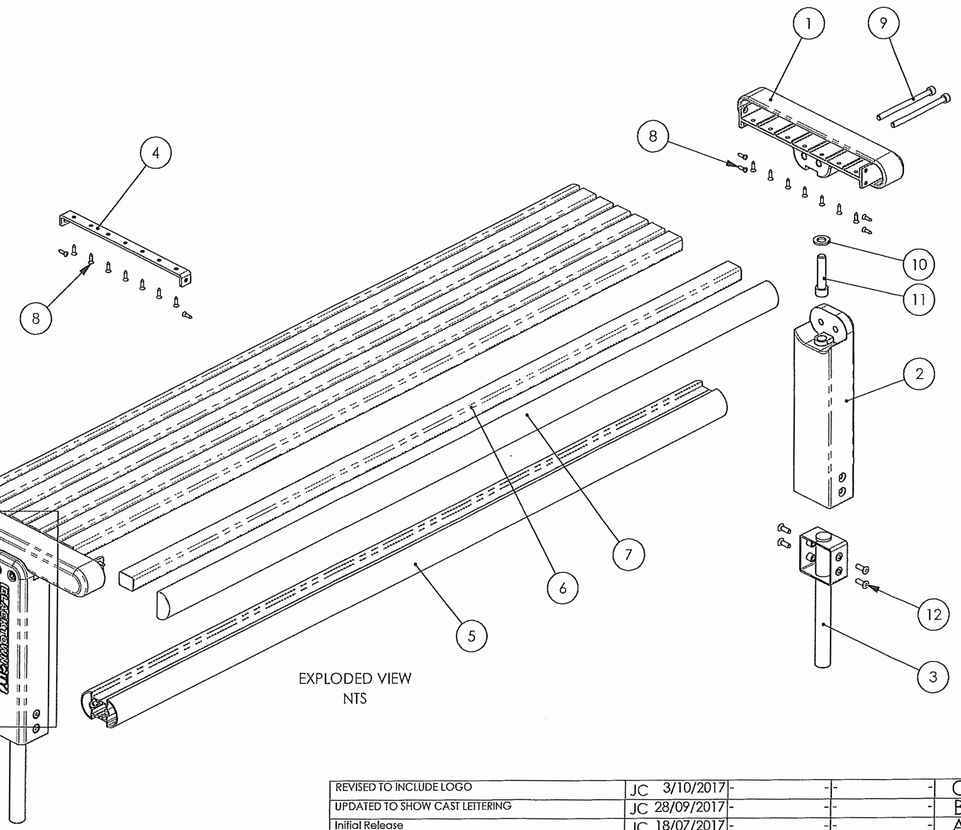




SECTION A-A
SCALE 1 : 5



DETAIL B
SCALE 1 : 5



EXPLODED VIEW
NTS

GENERAL NOTES:

1. All dimensions in millimetres unless otherwise shown.
2. Tolerances
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REV	DESCRIPTION	DRAWN	DATE	CHECKED	DATE	CERTIFIED	DATE	REVISION
	REVISED TO INCLUDE LOGO	JC	3/10/2017	-	-	-	-	C
	UPDATED TO SHOW CAST LETTERING	JC	28/09/2017	-	-	-	-	B
	Initial Release	JC	18/07/2017	-	-	-	-	A

[HUB]
www.hub-group.com

Title: PICNIC BENCH GENERAL ASSEMBLY
Dwg No: 9646-833
Product: BCC - PARK SUITE
Project No: 9646
Material:
Date Drawn: 18/07/2017
Finish:
Scale: 1:10 UNO
Part Location:
Part Name:
Weight:
A3

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Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
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16a/1-15 Tramore Place
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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

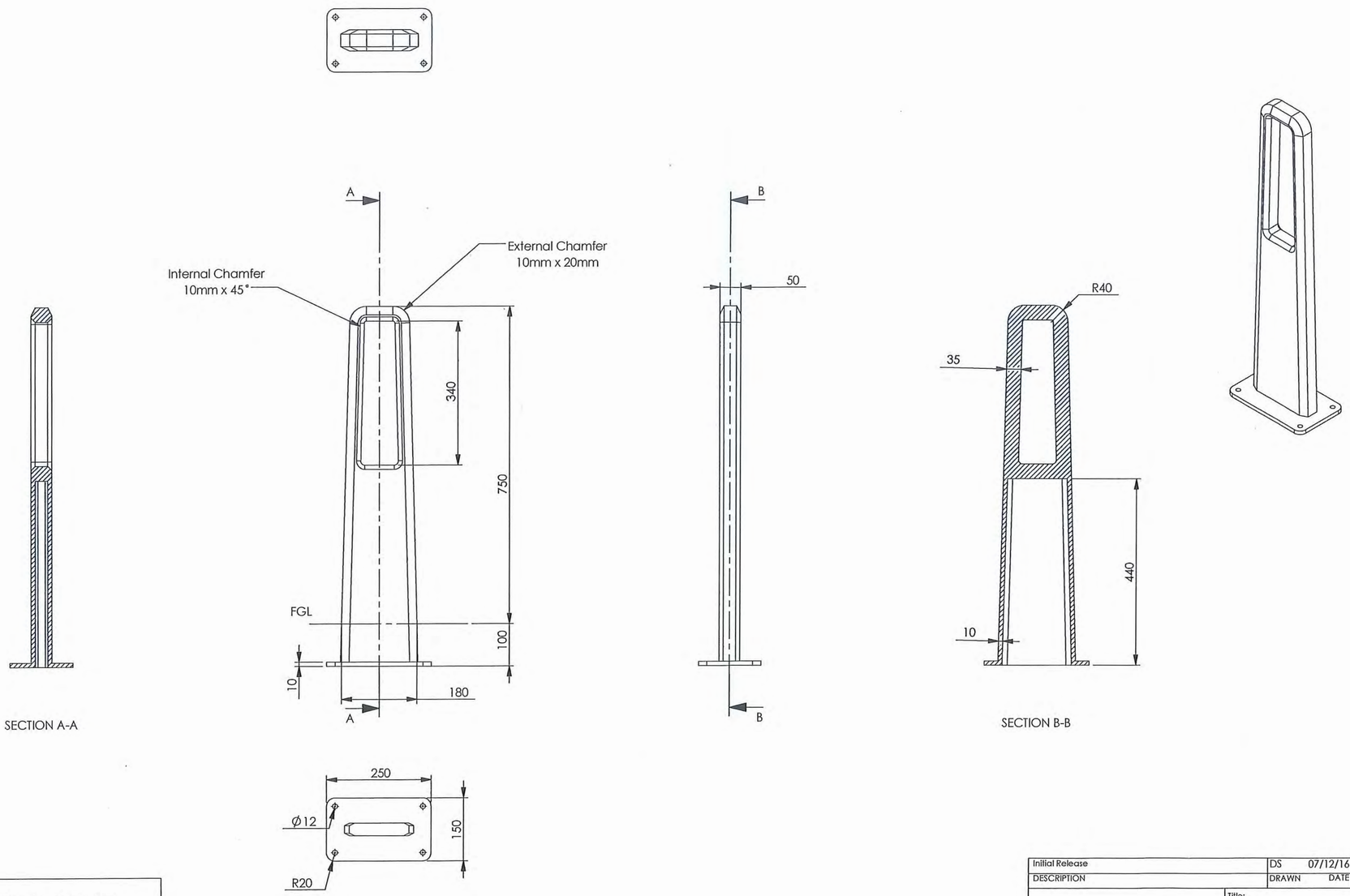
REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
F2 - PICNIC TABLE

ISSUE: FOR CC
PROJECT NO.: -
SCALE: NTS
DRAWING NO.: LA-602
REVISION: -



GENERAL NOTES:

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2. Tolerances
   -Linear dimension tolerances as specified on drawings. General tolerances are as follows:
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   50mm - 120mm ± 0° 20',120mm - 400mm ± 0°10'
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3. No deviation from drawing will be accepted without prior written approval.
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ALUMINIUM NOTES:

1. Production Finish : Architectural Surface.
2. All edges to be deburred and free of sharp protrusions
3. All surfaces to be free from marks and scratches.
4. Maximum extrusion twist tolerance of 2° over total length unless specified.
5. Endcuts to be perpendiclur to main axis unless specified.
6. Anodising 25microns to AS 1231.

REFER TO IGS FILE FOR ADDITIONAL DIMENSIONS

Initial Release	DS	07/12/16	-	-	-	-	A
DESCRIPTION	DRAWN	DATE	CHECKED	DATE	CERTIFIED	DATE	REVISION

[HUB]
www.hub-group.com

Title: Body
Dwg No: 9646-057
Product: Urban Bollard
Project No: 9646
Material: Aluminium A356
Date Drawn: 07/12/16
Finish: Powdercoat RAL TBC
Scale: 1:10
Part Location:
Part Name:
Weight: 15.62 kg
A3

Registered Design © HUB Innovations Pty Ltd 2016

Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

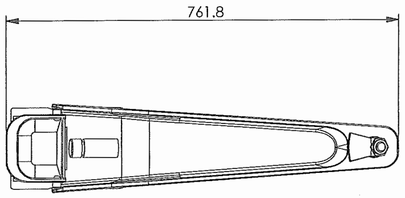
PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
F3 - BIKE RACK

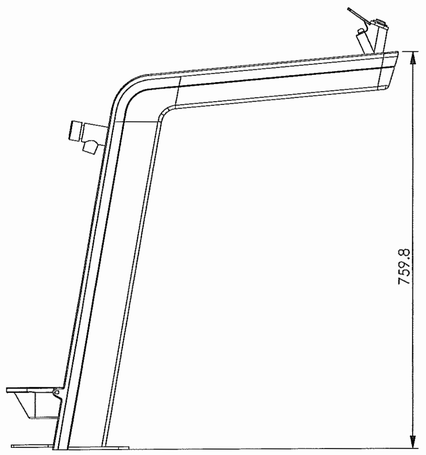
ISSUE: FOR CC
PROJECT NO.: -
SCALE: NTS
DRAWING NO.: LA-603
REVISION: -

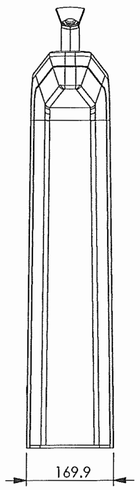
PARTS LIST

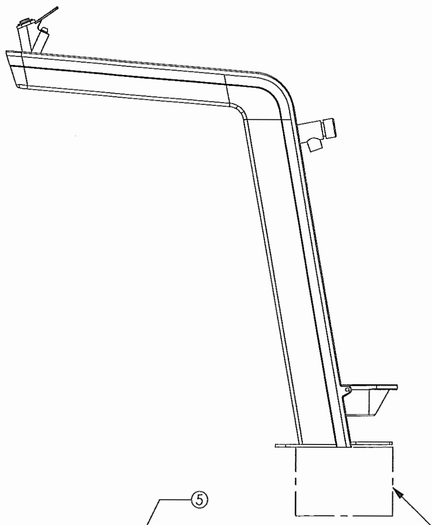
NO.	TITLE	MATERIAL	DRAWING #	QTY
1	Body Top	Aluminium A356	9646-510	1
2	Body Lower	Aluminium A356	9646-511	1
3	Dog Bowl	Aluminium A356	9646-512	1
4	Drain Grate	Aluminium A356	Refer to Lusail Fountain	1
5	Type 61 Bubbler Outlet			1
6	OEM-Tap-DELABIE - DE746000			1

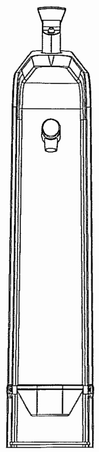


DIMENSIONS TO BE CHECKED AGAINST DDA STANDARD

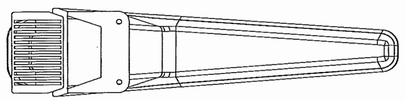


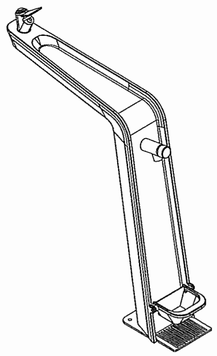


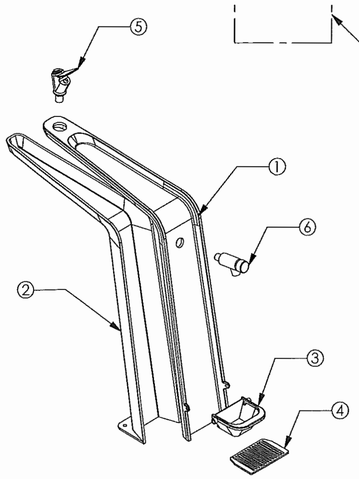




DRAINAGE SYSTEM AS PER
LUSAIL MARINA DRINKING FOUNTAIN.







GENERAL NOTES:

1. All dimensions in millimetres unless otherwise shown.
2. Tolerances
   - Linear dimension tolerances as specified on drawings. General tolerances are as follows: 0.5mm - 6mm ± 0.1, 6mm - 30mm ± 0.2, 30mm - 120mm ± 0.3, 120mm - 400mm ± 0.5, 400mm - 1000mm ± 0.8, 1000mm - 2000mm ±1.2
   - Tolerances on all angular dimensions shall be as specified in drawings. General angular tolerances based on length of short side of angle are: >0 -10mm ± 1°, 10mm - 50mm ± 0° 30', 50mm - 120mm ± 0° 20', 120mm - 400mm ± 0°10'
   - Holes and radii ± 0.5mm unless specified otherwise.
3. No deviation from drawing will be accepted without prior written approval.
4. Do not scale from drawings. Use dimensions provided if this is insufficient or ambiguous contact HUB for clarification

DESCRIPTION	DRAWN	DATE	CHECKED	DATE	CERTIFIED	DATE	REVISION
Initial Release	DS	10/12/16	-	-	-	-	A

HUB STREET EQUIPMENT
www.hubstreetequipment.com

Title: General Assembly	Dwg No: 9646-014
Product: Urban Drinking Fountain	Project No: 9646
Material: Refer ta parts list	Date Drawn: 10/12/16
Finish: Refer to Parts List	Scale: 1:10
Part Location: / Part Name:	Weight: - kg / A3

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Paterson Design Studio
Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

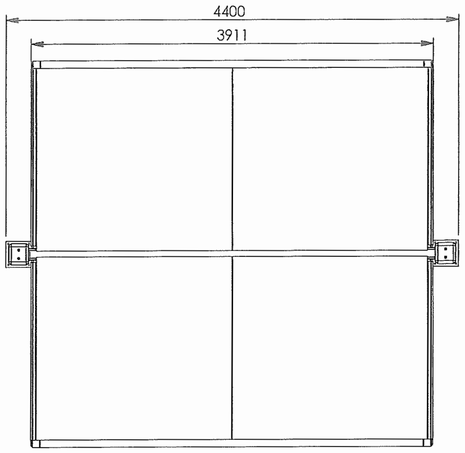
REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

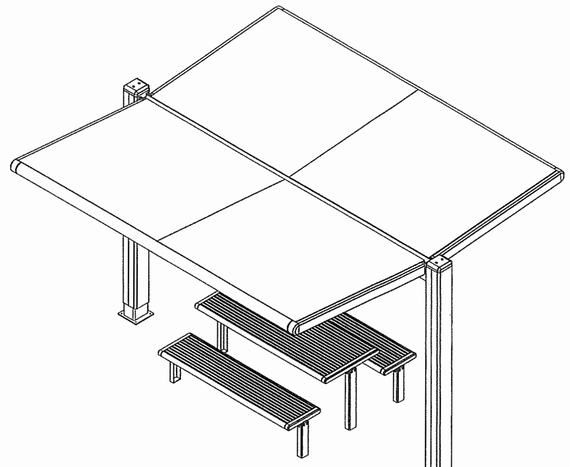
CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

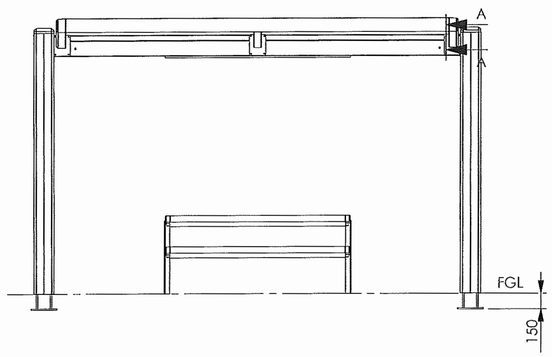
DRAWING TITLE
F5 - DRINKING FOUNTAIN

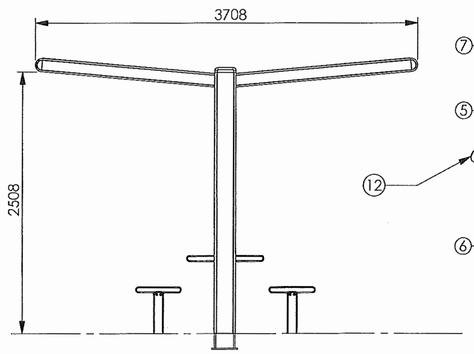
ISSUE: FOR CC
PROJECT NO.: -
SCALE: NTS
DRAWING NO.: LA-604
REVISION: -

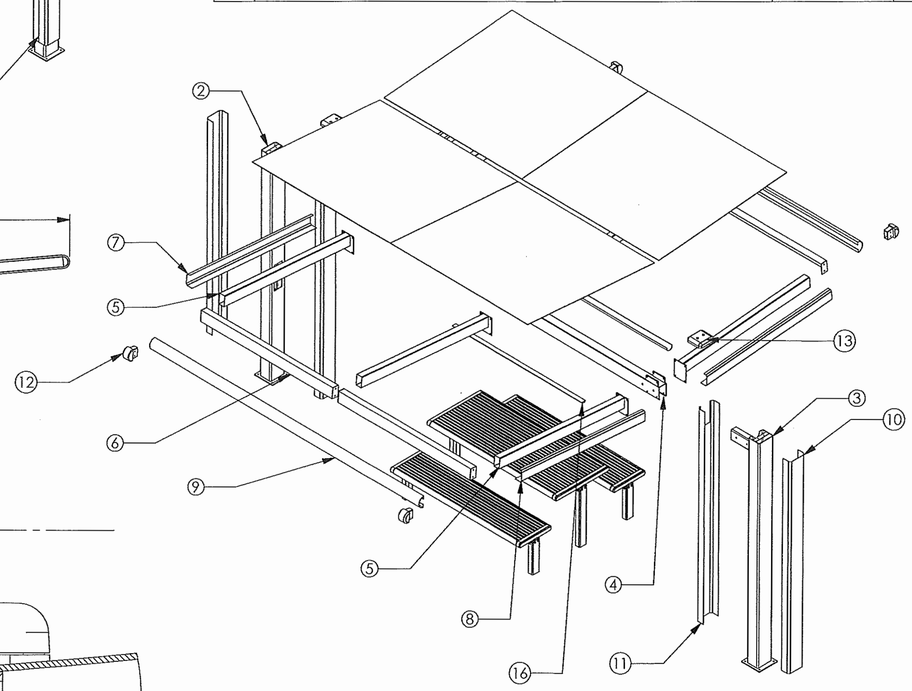


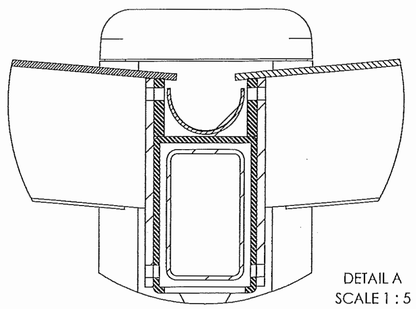


DRAINAGE DETAIL YET TO BE CONFIRMED
PLEASE PRICE BASED ON PAST SHELTERS









DETAIL A
SCALE 1 : 5

PARTS LIST

NO.	TITLE	MATERIAL	DRAWING #	WEIGHT	QTY
1	S5 Picnic Set	As Per Assembly			1
2	Column with Tech	Mild Steel	9646-200	91.74	1
3	Column with Drainage	Mild Steel	9646-201	88.06	1
4	Spine	Mild Steel	9646-202	90.47	1
5	Rafter - Typical	Mild Steel	9646-203	17.57	6
6	Rafter Connector	Mild Steel	9646-204	17.45	4
7	Rafter - Fascia - Left	Aluminium 6061 T1	9646-206	3.31	2
8	Rafter - Fascia - Right	Aluminium 6061 T1	9646-205	3.31	2
9	Roof Fascia	Aluminium 6061	9646-207	10.34	2
10	Column Cladding	Aluminium 6061 T1	9646-208	7.45	2
11	Column Cladding - Spine Cutout	Aluminium 6061 T1	9646-209	7.19	2
12	Rafter Cap	Aluminium A356	9646-210	1.66	4
13	Column Top Cap	Aluminium A356	9646-211	1.34	2
14	Roof Panel	Sandwich Panel	9646-212	20.06	4
15	Gutter	OEM			1
16	LED Strip	OEM			1

GENERAL NOTES:

1. All dimensions in millimetres unless otherwise shown.
2. Tolerances
   -Linear dimension tolerances as specified on drawings. General tolerances are as follows:
   0.5mm - 6mm ± 0.1, 6mm - 30mm ± 0.2,
   30mm - 120mm ± 0.3,120mm - 400mm ± 0.5,
   400mm - 1000mm ± 0.8,1000mm - 2000mm ±1.2
   -Tolerances on all angular dimensions shall be as specified in drawings. General angular tolerances based on length of short side of angle are:
   >0 -10mm ± 1°,10mm - 50mm ± 0° 30',
   50mm - 120mm ± 0° 20',120mm - 400mm ± 0°10'
   -Holes and radii ± 0.5mm unless specified otherwise.
3. No deviation from drawing will be accepted without prior written approval.
4. Do not scale from drawings. Use dimensions provided If this is insufficient or ambiguous contact HUB for clarification

Initial Release	DS	8/12/2016	-	-	-	A
DESCRIPTION	DRAWN	DATE	CHECKED	DATE	CERTIFIED	DATE REVISION

HUB STREET EQUIPMENT
www.hubstreetequipment.com

Title: Default		Dwg No: 9646-001
Product: S5-Shelter		Project No: 9646
Material: Refer to parts list		Date Drawn: 8/12/2016
Finish: Refer to Parts List		Scale: 1:50
Part Location:	Weight: - kg	A3
Part Name:		

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT
STOCKLAND

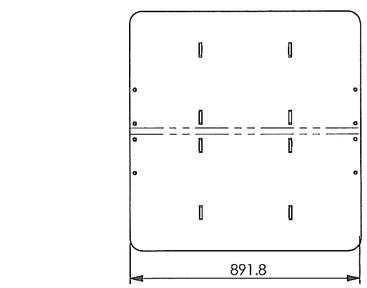
PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
F6 - SHELTER

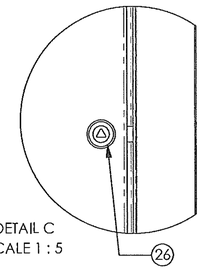
ISSUE: FOR CC
PROJECT NO.: -

SCALE: NTS

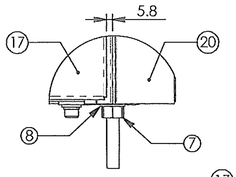
DRAWING NO.: LA-605
REVISION: -



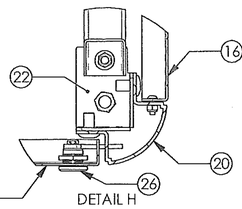
TOP



DETAIL C
SCALE 1 : 5



DETAIL B
SCALE 1 : 5



DETAIL H
SCALE 1 : 5

GENERAL NOTES:

1. All dimensions in millimetres unless otherwise shown.
2. Tolerances
   - Linear dimension tolerances as specified on drawings. General tolerances are as follows:
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     30mm - 120mm ± 0.3,120mm - 400mm ± 0.5,
     400mm - 1000mm ± 0.8,1000mm - 2000mm ±1.2
   - Tolerances on all angular dimensions shall be as specified in drawings. General angular tolerances based on length of short side of angle are:
     >0 -10mm ± 1°,10mm - 50mm ± 0° 30',
     50mm - 120mm ± 0° 20',120mm - 400mm ± 0°10'
   - Holes and radii ± 0.5mm unless specified otherwise.
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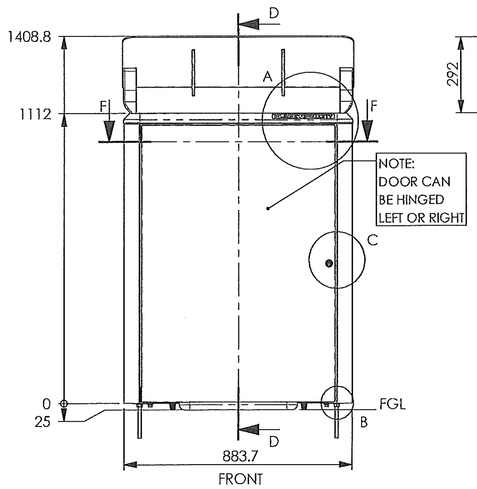
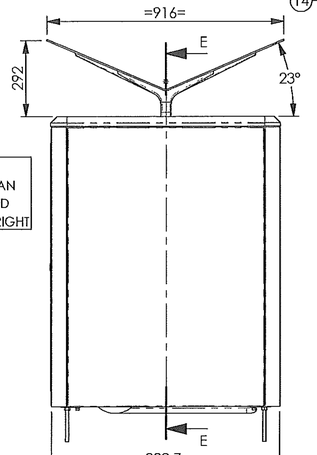
4. Do not scale from drawings. Use dimensions provided! If this is insufficient or ambiguous contact HUB for clarification

PARTS LIST

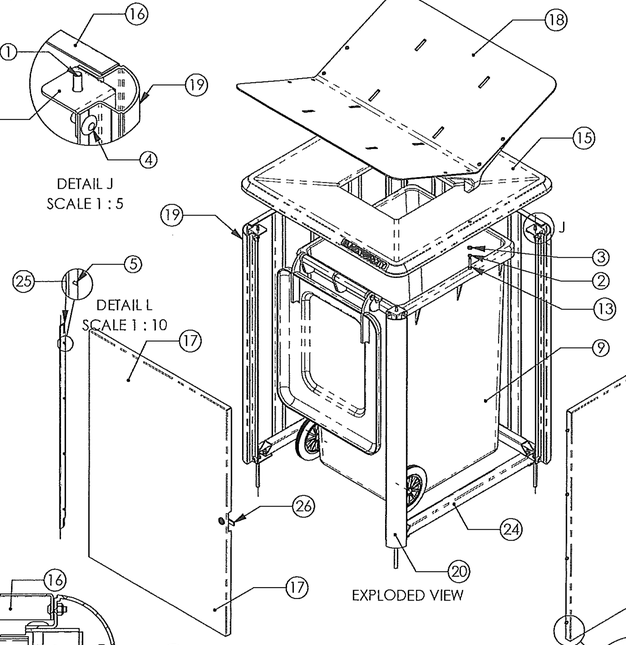
NO.	TITLE	MATERIAL	DRAWING #	QTY.
1	Cap Head Socket Screw M8x25	Stainless Steel Grade 304		10
2	Washer-Split-M8	Stainless Steel Grade 304		12
3	Washer-Narrow-M8	Stainless Steel Grade 304		18
4	10mm Rivet	Stainless Steel Grade 304		16
5	5mm Rivet	Stainless Steel Grade 304		8
6	HILTI HAS System M12 Threaded Rod			4
7	HILTI HAS System M12 Nut			8
8	HILTI HAS System M12 Washer			5
9	SULO Bin-240L-Assembly	BY OTHERS		1
10	Nylock Nut-M8	Stainless Steel Grade 304		6
11	Nylock Nut-M5	Stainless Steel Grade 304		24
12	Button Head Socket Screw M5x15	Stainless Steel Grade 304		24
13	Cap Head Socket Screw M8x95	Stainless Steel Grade 304		2
14	Top Connection Bracket	Mild Steel	0005-351	4
15	BCC Park Bin Chute 240L SULO	Aluminium A356 T6	9646-301	1
16	Park Bin - Cladding - 240L	Pre-Galvanized Mild Steel Sheet	9646-303	3
17	Park Bin - Cladding - 240L	Pre-Galvanized Mild Steel Sheet	9646-305	1
18	BCC Park Bin Chute Cover Assembly - 240L SULO	Refer to parts list	9646-307	1
19	Park Bin Extrusion	Aluminium 6061-T6	9646-312	3
20	BCC Bin Extrusion Lock Side - 240L SULO	Aluminium 6061-T6	9646-314	1
21	BCC Bin Bottom Connection Bracket - Door LHS	Mild Steel	9646-315	1
22	BCC Bin Bottom Connection Bracket - Door RHS	Mild Steel	9646-316	1
23	BCC Bin Bottom Connection Bracket	Mild Steel	9646-317	2
24	BCC Bin Bottom Brace - 240L SULO	Mild Steel	9646-319	3
25	BCC Piano Hinge	304 Stainless Steel	9646-321	1
26	Concept Lock-Cam Lock-Assembly-TL118		TL118 - T001	1



FRONT

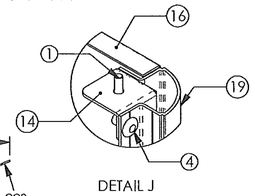


SIDE

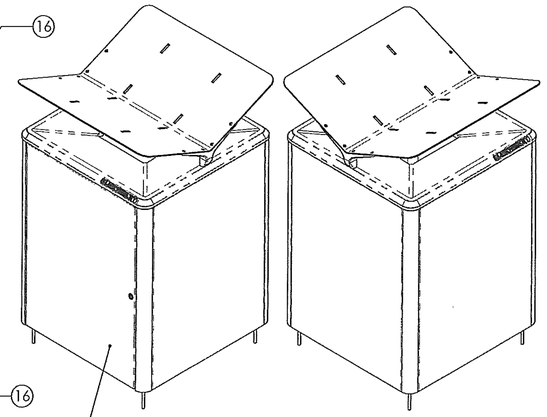


EXPLODED VIEW

DETAIL L
SCALE 1 : 10

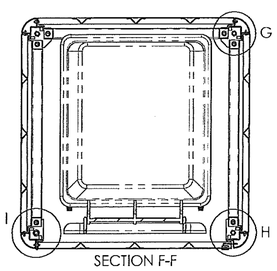


DETAIL J
SCALE 1 : 5

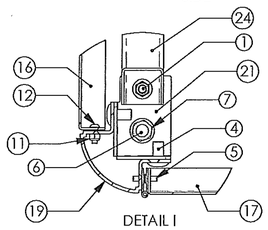


PICTORIAL VIEW
SHOWING DOOR SIDE
NTS

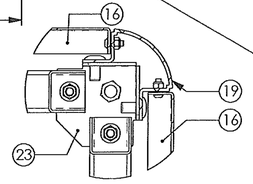
PICTORIAL VIEW
SHOWING SIDE OPPOSITE DOOR
NTS



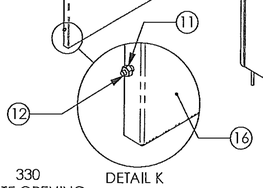
SECTION F-F



DETAIL I
SCALE 1 : 5

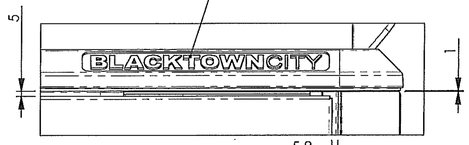


DETAIL G
SCALE 1 : 5

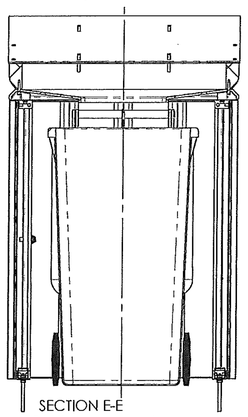


DETAIL K
SCALE 1 : 5

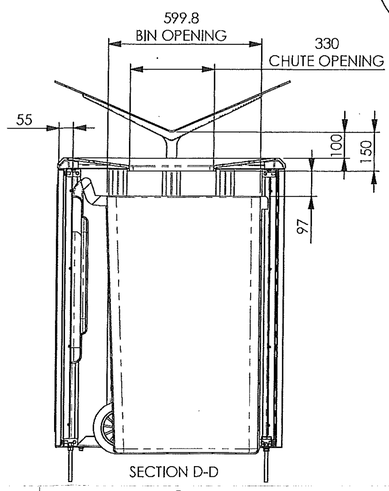
NOTE:
DOOR CAN
BE HINGED
LEFT OR RIGHT



DETAIL A
SCALE 1 : 5



SECTION E-E



SECTION D-D

DESCRIPTION	DRAWN	DATE	CHECKED	DATE	CERTIFIED	DATE	REVISION
REVISED TO SHOW LOGO ON CHUTE	JC	3/10/2017	-	-	-	-	C
ASSEMBLY REVISED TO SHOW UPDATED PANEL STIFFENERS AND LETTERING ON CHUTE	JC	28/09/2017	-	-	-	-	B
Initial Release	JS	19/07/2017	-	-	-	-	A

HUB
www.hub-group.com

Title: BCC Park Bin - 240L SULO - GA
Dwg No: 9646-005
Product: BCC Park Bin - 240L SULO
Project No: 9646
Material: Refer to parts list
Date Drawn: 19/07/2017
Finish: Refer to Parts List
Scale: 1:20
Part Location:
Part Name:
Weight: - kg
A3

Registered Design © HUB Innovations Pty Ltd 2017

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Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

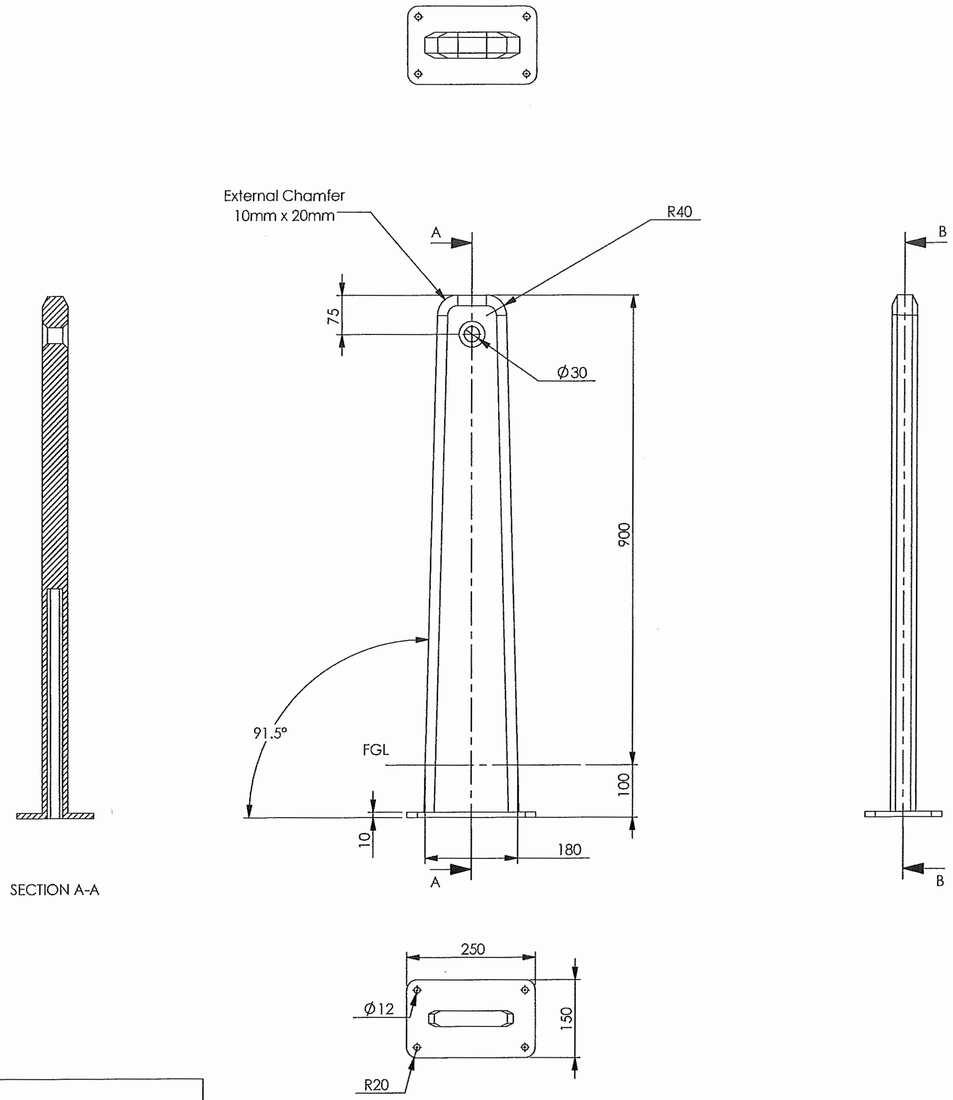
REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

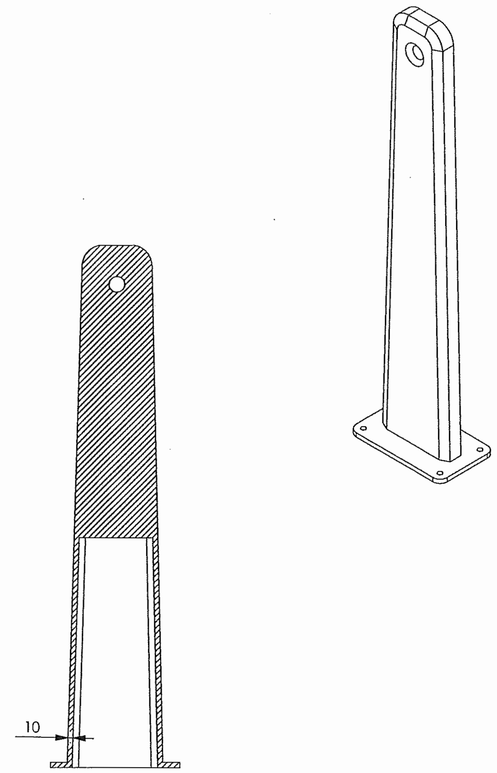
CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
F7 - BIN

ISSUE FOR CC
PROJECT NO. -
SCALE NTS
DRAWING NO. LA-606
REVISION -





GENERAL NOTES:

1. All dimensions in millimetres unless otherwise shown.
2. Tolerances
   -Linear dimension tolerances as specified on drawings.
   General tolerances are as follows:
   0.5mm - 6mm ± 0.1, 6mm - 30mm ± 0.2,
   30mm - 120mm ± 0.3,120mm - 400mm ± 0.5,
   400mm - 1000mm ± 0.8,1000mm - 2000mm ± 1.2
   -Tolerances on all angular dimensions shall be as specified in drawings. General angular tolerances based on length of short side of angle are:
   >0 -10mm ± 1°,10mm - 50mm ± 0° 30',
   50mm - 120mm ± 0° 20',120mm - 400mm ± 0°10'
   -Holes and radii ± 0.5mm unless specified otherwise.
3. No deviation from drawing will be accepted without prior written approval.
4. Do not scale from drawings. Use dimensions provided if this is insufficient or ambiguous contact HUB for clarification

ALUMINIUM NOTES:

1. Production Finish : Architectural Surface.
2. All edges to be deburred and free of sharp protrusions
3. All surfaces to be free from marks and scratches.
4. Maximum extrusion twist tolerance of 2° over total length unless specified.
5. Endcuts to be perpendicular to main axis unless specified.
6. Anodising 25microns to AS 1231.

REFER TO IGS FILE FOR ADDITIONAL DIMENSIONS

Initial Release	DS 07/12/16	-	-	-	A
DESCRIPTION	DRAWN DATE	CHECKED DATE	CERTIFIED DATE		REVISION

[HUB]
www.hub-group.com

Title: Body	Dwg No: 9646-056
Product: Urban Bollard	Project No: 9646
Material: Aluminium A356	Date Drawn: 07/12/16
Finish: Powdercoat RAL TBC	Scale: 1:10
Part Location:	
Part Name:	Weight: 15.59 kg — A3

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admin@pdsdesign.com.au
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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
B1/B3 - FIXED BOLLARD

ISSUE: FOR CC
PROJECT NO.: -
SCALE: NTS
DRAWING NO.: LA-607
REVISION: -

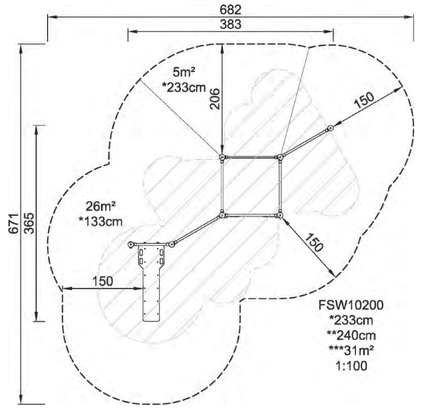
FSW10200

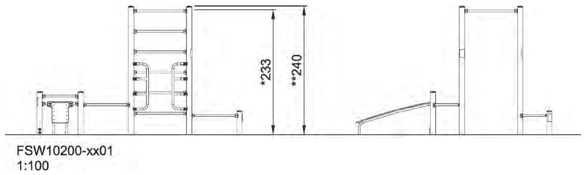
Combi 2

Compact and complete street workout combination featuring an incline bench, push up bar, decline press, horizontal ladder and pull up station. The Combi 2 is suitable for pro's to beginners, with both cleverly placed bars to determine difficulty level, and clean work out space for advanced training.

Product Line	Outdoor Fitness
Category	Street Workout & Calisthenics
Age from	13 - 16+
Max. fall height (CM)	233
Total height (CM)	240
Safety Zone	31 m2

SUR-FACE IN-GROU. ASTM





* = Highest designated play surface.
** = Total height of product.

Weight/heaviest parts	kg.	**Installation (Manpower)**	1 Persons
Concrete required	NaN m3	**Installation (Hours)**	3 Hours
Foundation amount/footing	NaN	**Excavation**	NaN m3

KOMPAN AUSTRALIA 7 Prosperity Place,
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admin@pdsdesign.com.au
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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

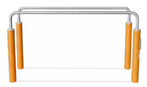
PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
E1 - COMBI 2

ISSUE FOR CC
PROJECT NO. -
SCALE NTS
DRAWING NO. LA-608
REVISION -

FSW20100

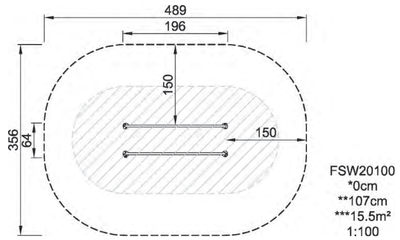
Parallel Bars



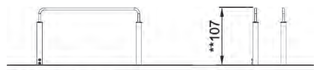
A set of two bars at equal heights, ideal for hand balancing exercises as known from the classic gym, and excellent for the core and overall strength. Parallel bars are perfect for doing dips, which is great for strengthening the chest, shoulder and arm muscles.

Product Line	Outdoor Fitness
Category	Street Workout & Calisthenics
Age from	13 - 16+
Total height (CM)	107
Safety Zone	15.5 m2

SUR-FACE IN-GROU. ASTM



FSW20100
*0cm
**107cm
***15.5m²
1:100



FSW20100-xx01
1:100

* = Highest designated play surface.
** = Total height of product.

Weight/heaviest parts	kg.	**Installation (Manpower)**	1 Persons
Concrete required	NaN m3	**Installation (Hours)**	2 Hours
Foundation amount/footing	NaN	**Excavation**	NaN m3

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
E2 - PARALLEL BARS

ISSUE: FOR CC
PROJECT NO.: -
SCALE: NTS
DRAWING NO.: LA-609
REVISION: -

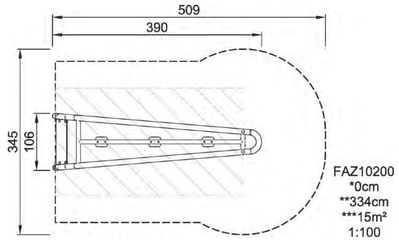
FAZ10200

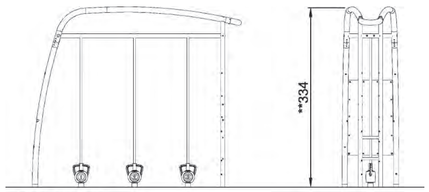
Magnetic Bells

Safe free weight training in the outdoors through an innovative breaking system. The three different weights move freely up and down a vertical tube, featuring a magnetic breaking system that offers controllable resistance, and prevents the weights from dropping to the surface and slows down the fall to a reduced pace. The option to choose between a light, medium or heavy training weight, makes the Rope Bells frame an accessible piece of equipment for both the trained and the untrained.

Product Line	Outdoor Fitness
Category	Cross Training
Age from	13 - 16+
Total height (CM)	334
Safety Zone	15 m2

SUR-FACE IN-GROU. ASTM





FAZ10200-xx00
1:100

* = Highest designated play surface.
** = Total height of product.

Weight/heaviest parts	kg.	**Installation (Manpower)**	1 Persons
Concrete required	NaN m3	**Installation (Hours)**	9 Hours
Foundation amount/footing	NaN	**Excavation**	NaN m3

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Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
E3 - MAGNETIC BELLS

ISSUE: FOR CC
PROJECT NO.: -
SCALE: NTS
DRAWING NO.: LA-610
REVISION: -

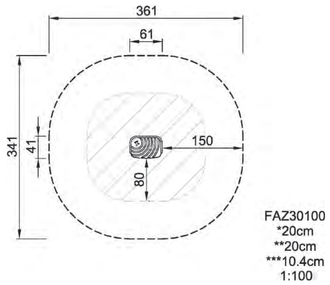
FAZ30100

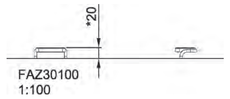
Step, 20 cm

The step is one of the most simple yet highly versatile training tools, so many exercises can be done with it, from simple step ups to plyometric jumps. Regular sessions will provide both cardiovascular and muscular endurance. Incorporating upper and lower body movements will improve balance and agility, and the constant push up onto the step will increase leg strength.

Product Line	Outdoor Fitness
Category	Cross Training
Age from	13 - 16+
Max. fall height (CM)	20
Total height (CM)	20
Safety Zone	10.4 m2

SUR-FACE IN-GROU. ASTM





* = Highest designated play surface.
** = Total height of product.

Weight/heaviest parts	kg.	**Installation (Manpower)**	1 Persons
Concrete required	NaN m3	**Installation (Hours)**	1 Hours
Foundation amount/footing	NaN	**Excavation**	NaN m3

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
E4 - STEP 20CM

ISSUE FOR CC
PROJECT NO. -

SCALE
NTS

DRAWING NO. LA-611
REVISION -

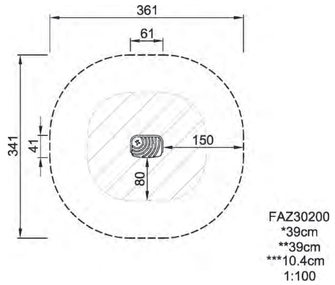
FAZ30200

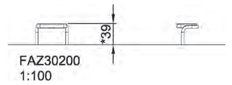
Step, 40 cm

The step is one of the most simple yet highly versatile training tools, so many exercises can be done with it, from simple step ups to plyometric jumps. Regular sessions will provide both cardiovascular and muscular endurance. Incorporating upper and lower body movements will improve balance and agility, and the constant push up onto the step will increase leg strength.

Product Line	Outdoor Fitness
Category	Cross Training
Age from	13 - 16+
Max. fall height (CM)	39
Total height (CM)	39
Safety Zone	10.4 m2

SUR-FACE IN-GROU. ASTM





* = Highest designated play surface.
** = Total height of product.

Weight/heaviest parts	kg.	**Installation (Manpower)**	1 Persons
Concrete required	NaN m3	**Installation (Hours)**	1 Hours
Foundation amount/footing	NaN	**Excavation**	NaN m3

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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
E5 - STEP 40CM

ISSUE: FOR CC
PROJECT NO.: -

SCALE: NTS

DRAWING NO.: LA-612
REVISION: -

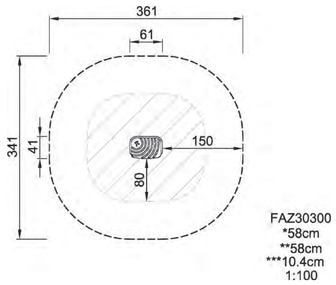
FAZ30300

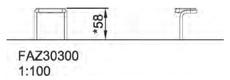
Step, 60 cm

The step is one of the most simple yet highly versatile training tools, so many exercises can be done with it, from simple step ups to plyometric jumps. Regular sessions will provide both cardiovascular and muscular endurance. Incorporating upper and lower body movements will improve balance and agility, and the constant push up onto the step will increase leg strength.

Product Line	Outdoor Fitness
Category	Cross Training
Age from	13 - 16+
Max. fall height (CM)	58
Total height (CM)	58
Safety Zone	10.4 m2

SUR-FACE IN-GROU. ASTM





* = Highest designated play surface.
** = Total height of product.

Weight/heaviest parts	kg.	**Installation (Manpower)**	1 Persons
Concrete required	NaN m3	**Installation (Hours)**	1 Hours
Foundation amount/footing	NaN	**Excavation**	NaN m3

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Landscape Architects / Urban Designers
Registered Landscape Architect: Garth Paterson FAILA Reg#716
BLA (CANB) MLAUD (HARV)
Paterson Design Studio PTY. LTD
16a/1-15 Tramore Place
Killarney Heights, NSW 2087.
T +61 2 9452 4911
admin@pdsdesign.com.au
www.pdsdesign.com.au

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J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
E6 - STEP 60CM

ISSUE: FOR CC
PROJECT NO.: -
SCALE: NTS
DRAWING NO.: LA-613
REVISION: -

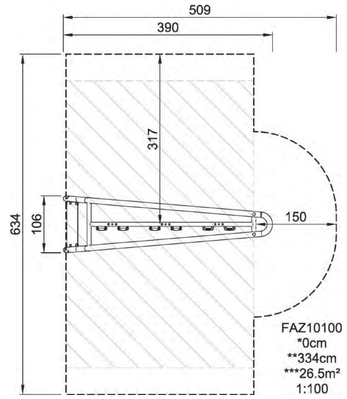
FAZ10100

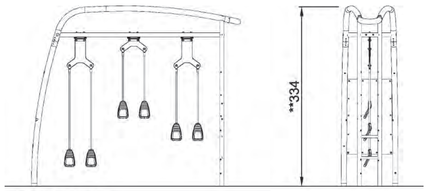
Suspension Trainer

Three suspension trainers hanging at varying heights for highly versatile and accessible own bodyweight training. Using gravity and body position hundreds of exercises can be performed according to individual fitness levels and abilities. The intensity of each exercise can be determined simply by adjusting the body position to add more or less resistance. Suspension training is very effective because it simultaneously increases strength, balance, flexibility and core stability.

Product Line	Outdoor Fitness
Category	Cross Training
Age from	13 - 16+
Total height (CM)	334
Safety Zone	26.5 m2

SUR-FACE IN-GROU.





FAZ10100-xx00
1:100

* = Highest designated play surface.
** = Total height of product.

Weight/heaviest parts	kg.	**Installation (Manpower)**	1 Persons
Concrete required	NaN m3	**Installation (Hours)**	11 Hours
Foundation amount/footing	NaN	**Excavation**	NaN m3

KOMPAN AUSTRALIA 7 Prosperity Place,
Geebung QLD 4034 Phone: +61 07 3635 6200
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REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

DRAWING TITLE
E7 - SUSPENSION TRAINER

ISSUE FOR CC
PROJECT NO. -
SCALE NTS
DRAWING NO. LA-614
REVISION -

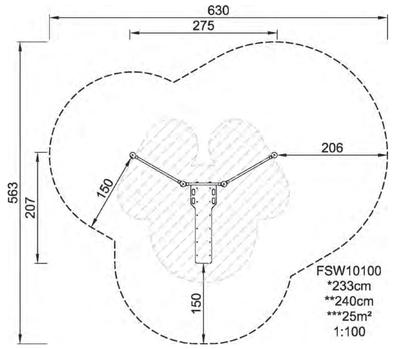
FSW10100

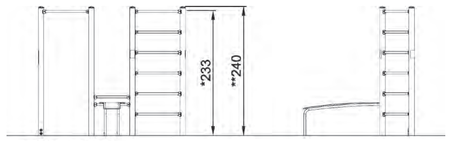
Combi 1

Space efficient combination of essential street workout equipment with a pull up bar, horizontal ladder and bench. A trainer's favourite, because it is the perfect training station for using additional exercise tools, such as suspension trainers and small weights.

Product Line	Outdoor Fitness
Category	Street Workout & Calisthenics
Age from	13 - 16+
Max. fall height (CM)	233
Total height (CM)	240
Safety Zone	25 m2

SUR-FACE IN-GROU. ASTM





FSW10100-xx01
1:100

* = Highest designated play surface.
** = Total height of product.

Weight/heaviest parts	kg.	**Installation (Manpower)**	1 Persons
Concrete required	NaN m3	**Installation (Hours)**	2 Hours
Foundation amount/footing	NaN	**Excavation**	NaN m3

KOMPAN AUSTRALIA 7 Prosperity Place,
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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

REV	NO	DESCRIPTION	DWN	CHK	DATE
A	01	QS ISSUE PRE CC SUBMISSION	ET	GP	08.11.18

CLIENT STOCKLAND

PROJECT
ELARA P5 PARKLANDS
FURNITURE & EXERCISE EQUIPMENT

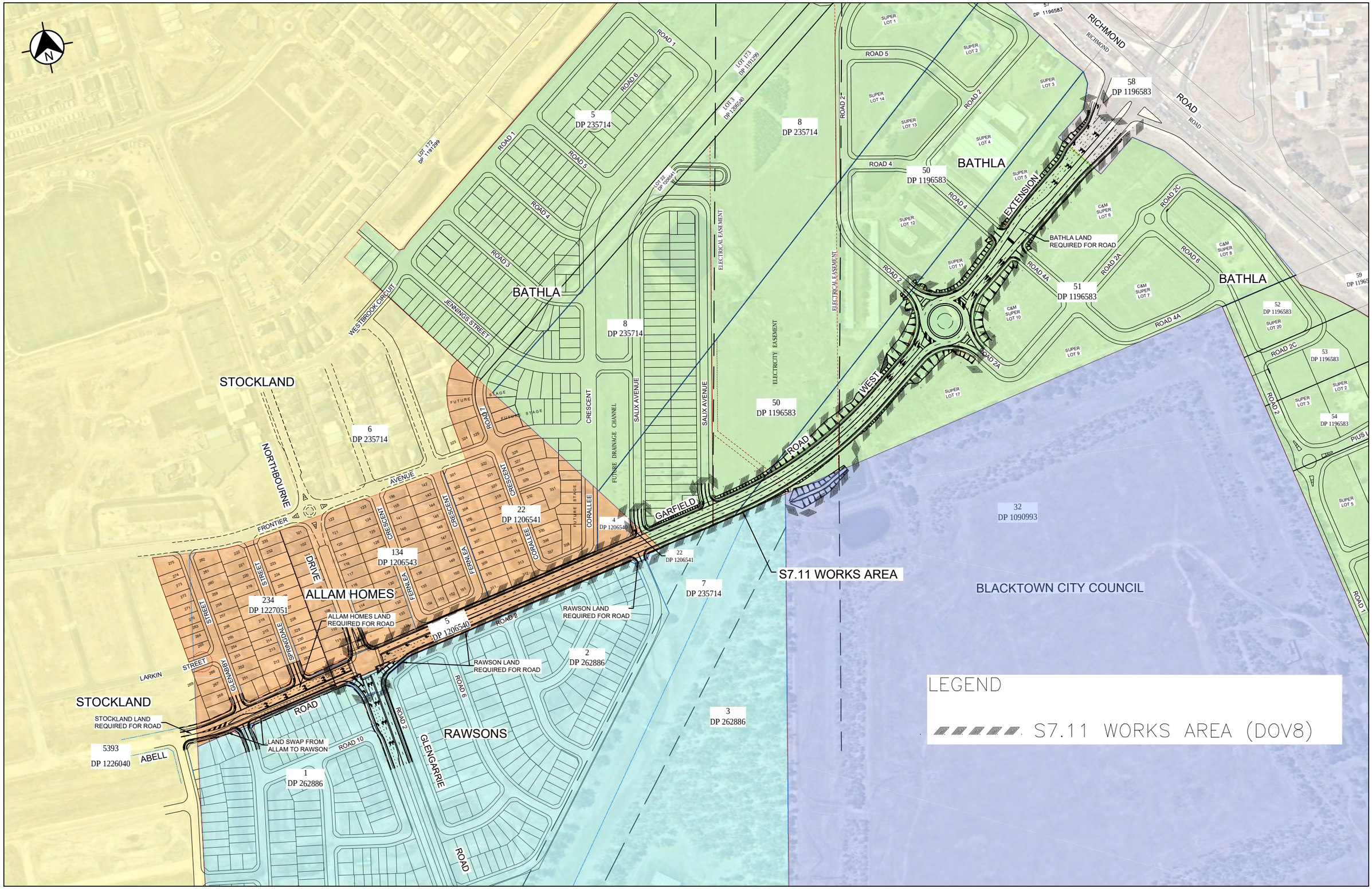
DRAWING TITLE
E8 - COMBI 1

ISSUE: FOR CC
PROJECT NO.: -
SCALE: NTS
DRAWING NO.: LA-615
REVISION: -

Part 4 – Specifications for the GRWE Road Works

See following pages

PRELIMINARY DRAWING ONLY NOT FOR CONSTRUCTION



PLOTTED 2/18/2019 2:30 PM J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn to Abell Rd\RT\SK\110350-07-SK-034.dwg

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
FROM RICHMOND ROAD TO ABELL ROAD
SITE DEVELOPER OWNERSHIP COORDINATION PLAN
SCALE 1:2000

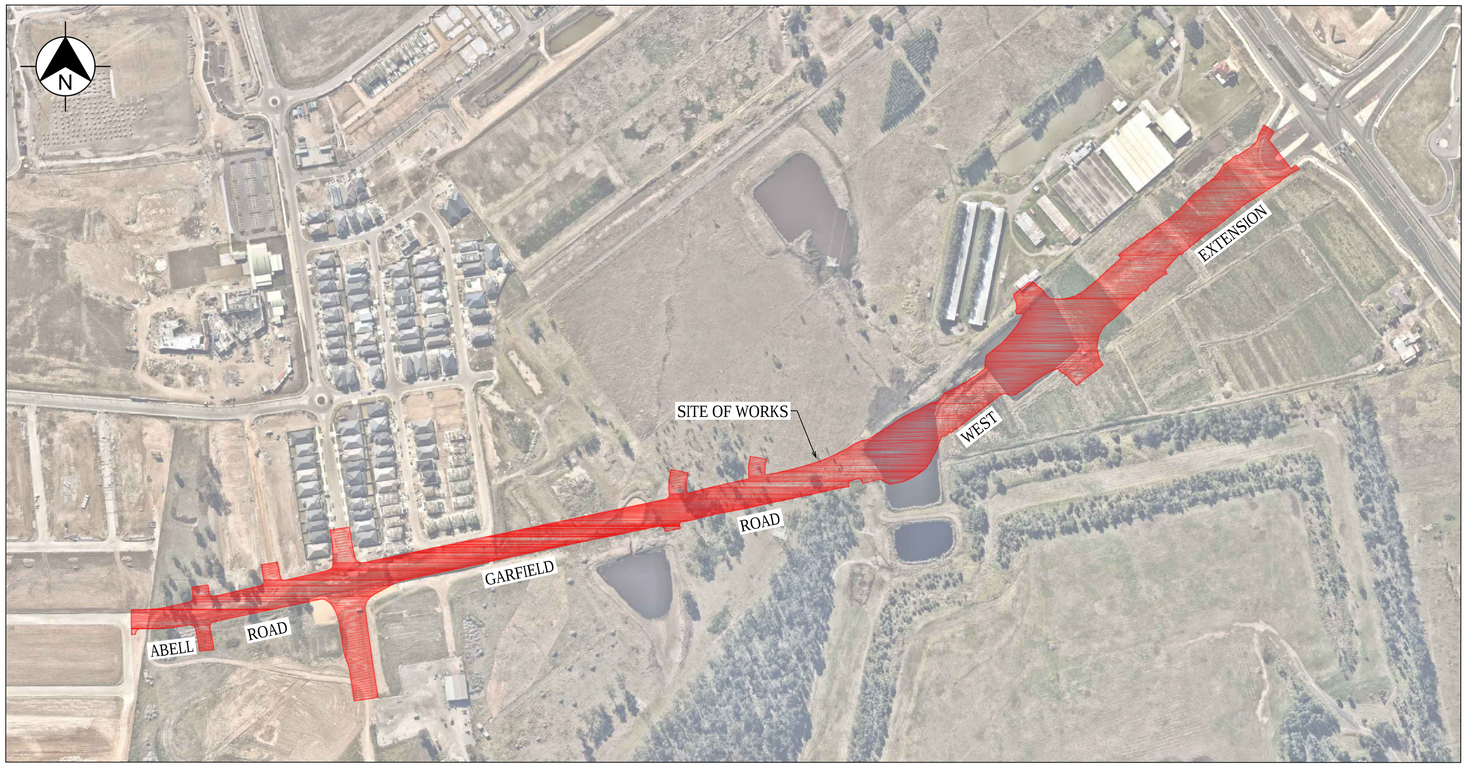
110350-07-SK-034

Stockland

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK

RICHMOND ROAD TO ABELL ROAD

DETAILED DESIGN



LOCALITY SKETCH

Prepared By:

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300
W www.jwprince.com.au
E jwp@jwprince.com.au

FOR CONSTRUCTION APPROVAL

PLAN No. 110350-CC-001 I

FILE No. 110350-CC-001

Plotted: February 15, 2019 File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-001.dwg

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110350-CC-907	VEHICLE TURNING PATHS - SALIX CRESENT (1), SALIX CRESENT (2) AND MEGARRY AVE	G
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J	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
I	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
G	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	5/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

INDEX SHEET

PLAN No: 110350-CC-002 J
FILE No: 110350-CC-002
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:12:57 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-002.dwg

GENERAL NOTES

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S 'ENGINEERING GUIDE FOR DEVELOPMENT - 2005' AND TO THE REQUIREMENTS OF THE CERTIFYING AUTHORITY.

2. INSPECTIONS BY CERTIFYING AUTHORITY ARE REQUIRED AT THE FOLLOWING STAGES AND THE WORKS APPROVED PRIOR TO CONTINUANCE OF ANY FUTURE WORK:
   (A) FOLLOWING INSTALLATION OF EROSION AND SEDIMENT CONTROL STRUCTURES/MEASURES.
   (B) PRIOR TO BACKFILLING PIPELINES, SUBSOIL DRAINS AND DAMS.
   (C) PRIOR TO CASTING OF PITS AND OTHER CONCRETE STRUCTURES, INCLUDING KERB AND GUTTER BUT FOLLOWING PLACEMENT OF FOOTINGS, FORMWORK, AND REINFORCEMENT.
   (D) PRIOR TO PLACEMENT OF SUB BASE AND ALL SUBSEQUENT PAVEMENT LAYERS, A PROOF ROLLER TEST OF EACH PAVEMENT LAYER IS REQUIRED.
   (E) FORMWORKS PRIOR TO POURING CONCRETE.
   (F) PRIOR TO BACKFILLING PUBLIC UTILITY CROSSINGS IN ROAD RESERVES.
   (G) FINAL INSPECTIONS AFTER ALL WORKS ARE COMPLETED AND 'WORKS AS EXECUTED' PLANS HAVE BEEN SUBMITTED TO COUNCIL.

3. ALL NEW WORKS SHALL MAKE SMOOTH JUNCTIONS WITH EXISTING CONDITIONS.

4. ALL RUBBISH, BUILDINGS, SHEDS AND FENCES IDENTIFIED FOR REMOVAL ARE TO BE REMOVED TO THE SATISFACTION OF COUNCIL'S ENGINEER.

5. NO TREES ARE TO BE FELLED, LOPPED OR REMOVED UNLESS APPROVAL IS GRANTED BY COUNCIL.

6. ALL MEASUREMENTS ARE IN METRES UNLESS OTHERWISE SHOWN.

7. NO INFORMATION IS TO BE SCALED FROM THE DRAWINGS.

8. ALL COORDINATES ARE 'MGA' GRID, LEVELS TO 'AHD'.

9. REFER TO PLAN 110350-CC-101 FOR SURVEY CONTROL DETAILS AND NOTES.

10. VEHICULAR CROSSINGS ARE TO BE 4.5m WIDE AT KERB AND GUTTER AND SHALL BE CONSTRUCTED IN KERB AND GUTTER WHERE SHOWN IN ACCORDANCE WITH COUNCIL'S STANDARD DRAWING. DRIVEWAY / LAYBACKS TO HAVE MINIMUM 1.0m CLEARANCE FROM POWER AND LIGHT POLES AND STORMWATER DRAINS AND 6.0m CLEARANCE FROM KERB RETURN TANGENT POINT.

11. PEDESTRIAN RAMPS SHALL BE CONSTRUCTED IN KERB AND GUTTER WHERE SHOWN IN ACCORDANCE WITH COUNCIL'S STANDARD DRAWING.

EARTHWORKS NOTES

12. FILLING IS TO BE FROM A NOMINATED SOURCE OF SOUND CLEAN MATERIAL WHICH IS FREE FROM ROCK, STUMPS, CONTAMINATED MATTER, INDUSTRIAL AND BUILDING WASTE, ORGANIC MATTER AND OTHER DEBRIS.

13. ALL SITE FILLING IS TO BE COMPACTED TO 95% STANDARD COMPACTION AND SHALL BE CONTROLLED BY A REGISTERED SOIL LABORATORY IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL'S "ENGINEERING GUIDE FOR DEVELOPMENT - 2005".

14. ALL SITE REGRADING AREAS SHALL BE FREE DRAINING AND GRADED AT A MINIMUM 1%

15. BATTERS ARE TO BE ADJUSTED AT THE CONSTRUCTION STAGE TO INTEGRATE WITH RECENT EARTHWORKS CONSTRUCTION ACTIVITIES AND/OR THE LIKELY APPROVED BULK EARTHWORKS DA FOR ALL ADJOINING DEVELOPMENTS BY BATHLA, ALLAM, RAWSON AND STOCKLAND DEVELOPERS,

TRAFFIC MANAGEMENT AND STAGING NOTES

16. PROVISION FOR TRAFFIC AT RICHMOND ROAD INTERSECTION, DURING CONSTRUCTION, IS TO BE IN ACCORDANCE WITH RMS SPECIFICATION G10.

17. FINAL TRAFFIC MANAGEMENT AND CONSTRUCTION STAGING DESIGNS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

18. ALL APPROVALS FOR TRAFFIC MANAGEMENT, STAGING AND CONSTRUCTION WORKS ARE TO BE OBTAINED PRIOR TO ANY SITE WORKS COMMENCING.

19. VEHICULAR ACCESS AND ALL UTILITIES/SERVICES ARE TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION. WHERE SPECIFIED ALTERNATIVE TEMPORARY ACCESS IS TO BE PROVIDED.

20. NO WORK IS TO BE CARRIED OUT ON COUNCIL PROPERTY OR ADJOINING PROPERTIES WITHOUT THE WRITTEN PERMISSION FROM THE OWNER/S.

UTILITIES NOTES

21. CAUTION SHOULD BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES.

22. THE CONTRACTOR MUST FOLLOW ALL UTILITY AUTHORITY "DUTY OF CARE REQUIREMENTS" WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES.

23. THE LOCATIONS OF UTILITY SERVICES AT THE SITE DEPICTED ON THIS PLAN FROM A DIAL BEFORE YOU DIG INVESTIGATION UNDERTAKEN SEPTEMBER 2018 AND HAS BEEN SUPPLEMENTED BY FIELD SURVEY BY RPS SURVEYORS (MAY 2018). POTHOLING OF UNDERGROUND SERVICES HAS NOT BEEN UNDERTAKEN. TO DETERMINE THE NATURE AND EXTENT OF THIS SURVEY WORK, REFERENCE MUST BE MADE TO THIS SURVEY PRIOR TO THE COMMENCEMENT OF ROADWORKS, AND THE RELEVANT UTILITY PLANS OBTAINED BY DIALLING PH. 1100 OR EMAIL (DIAL BEFORE YOU DIG).

24. THE LOCATION AND LEVEL OF NEW PUBLIC UTILITIES WHERE SHOWN ON THESE PLANS IS INDICATIVE ONLY. FINAL LOCATIONS ARE TO BE CONFIRMED ON SITE BY THE CONTRACTOR IN CONJUNCTION WITH THE RESPECTIVE AUTHORITIES TO THE SATISFACTION OF THE PRINCIPAL.

25. ANY DAMAGE TO EXISTING SERVICES IS TO BE RECTIFIED AT THE CONTRACTOR'S EXPENSE & VERIFIED ON SITE WITH THE UTILITY AUTHORITY REPRESENTATIVES.

26. EXISTING SERVICES ARE TO BE CLEARLY MARKED AND PROTECTED ON SITE AT ALL TIMES.

27. FOR ADJUSTMENT DETAILS TO UTILITY SERVICES SEE SEPARATE PLANS BY OTHERS.

PAVEMENT MARKING AND SIGNAGE NOTES

34. PAVEMENT MARKINGS TO BE IN ACCORDANCE WITH RMS DELINEATION GUIDELINES AND AUSTRALIAN STANDARDS.

STORMWATER NOTES

1. STORMWATER DESIGN CRITERIA:

   AVERAGE RECURRANCE INTERVAL:
   1:100 MAJOR SYSTEM
   1:20 MINOR SYSTEM (COMMERCIAL) AND INTERALLOTMENT DRAINAGE
   1:10 MINOR SYSTEM

2. PIPES TO BE INSTALLED TO TYPE HS2 SUPPORT IN ACCORDANCE WITH AS 3725 (1989) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 300mm LAYERS TO MINIMUM 100% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)

3. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 (1998) AND AS/NZS 3500 3.2 (1998).

4. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.

5. GRATES AND COVERS SHALL CONFORM TO AS 3996.

6. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.

7. DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH NON-COHESIVE SAND AND HAVE 3m (AS PER BCC GUIDE) OF SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK, DISCHARGING INTO DOWN STREAM PITS. FOR PIPELINES GREATER THAN 525Ø, SUBSOIL DRAIN SHALL BE PROVIDED ON BOTH SIDES OF THE TRENCH.

8. ALL STORMWATER PIPES WITHIN ROADS TO BE REINFORCED CONCRETE PIPE (RRJ) CLASS 2 OR FRC CLASS 2 UNLESS NOTED OTHERWISE.

9. DRAINAGE LINES ON PLANS ARE DIAGRAMMATIC ONLY AND PIPE CENTRELINES SHALL ENTER AND EXIT PITS AT THE CENTRE OF THE RESPECTIVE PIT WALLS.

10. STEP IRONS REQUIRED WHERE THE PIT EXCEEDS 1200 IN DEPTH. REFER TO COUNCIL DRAWING A(BS)1115

11. ALL SPECIAL PITS, PITS DEEPER THAN 2m OR NON STANDARD DRAINAGE PITS CAN BE EITHER CAST INSITU WITH STRUCTURAL DESIGN AND CERTIFICATION BY OTHERS. OR "AUS PIT" CUSTOM MADE PRECAST PIT OR SIMILAR APPROVED.

12. 100YR FLOW PATHS TO BE FORMED AT TIME OF CONSTRUCTION.

CUSTOM MADE PRECAST PIT NOTES

1. DESIGN DOCUMENTATION REFLECTS PRECAST DRAINAGE PITS BEING USED FOR THE SITE. UNLESS NOTED OTHERWISE. AUSPITS OR SIMILAR APPROVED CUSTOM MADE PRECAST PITS TO BE USED.

2. PITS TO COMPLY WITH THE FOLLOWING PARAMETERS:

   a. ARE SPECIFICALLY MANUFACTURED FOR THE PROJECT.
   b. EACH PIT IS ACCOMPANIED BY A CERTIFICATE OF STRUCTURAL ADEQUACY SIGNED BY A NPER ENGINEER (STRUCTURAL)
   c. THE STRUCTURAL CERTIFICATION OF THE PITS SHOULD INCLUDE ANY ADDITIONAL PRECAST ELEMENTS REQUIRED TO BRING THE PIT UP TO FINAL LEVELS ON SITE.
   d. PITS MUST BE FIRMLY BEDDED ON SOUND MATERIAL.
   e. CONCRETE IS TO BE POURED AROUND THE BASE TO AID IN STABILISATION OF THE PIT.
   f. PIT FLOORS ARE TO HAVE A 1% FALL TOWARDS THE OUTLET PIPE.
   g. ANY PIT REQUIRING MODIFICATION AFTER IT HAS BEEN POURED IN THE FACTORY OR DAMAGED IN TRANSPORT CANNOT BE USED.
   h. ALL WORK TO BE TO THE SATISFACTION OF COUNCIL'S DEVELOPMENT INSPECTORS.

3. SHOULD THE CONTRACTOR CHOOSE TO CONSTRUCT ANY PIT AS 'CAST-INSITU', IT'S THE CONTRACTORS RESPONSIBILITY TO PROVIDE DETAILED PIT DRAWINGS AND STRUCTURAL CERTIFICATION OF THE RELEVANT PITS.

HYDROLOGY NOTES:

1. STORMWATER SYSTEM DESIGNED USING 12D DYNAMIC (ILSAX) SYSTEM.
2. BP LINES ARE DUMMY PITS AND ARE USED TO MORE ACCURATELY DETERMINE APPROACH FLOWS AT UPSTREAM PITS AND SAG LOCATIONS. RESULTS ON THESE DUMMY LINES MAY NOT BE VALID/RELEVANT.
3. MAXIMUM FLOW WIDTHS OF 2.0m IN GUTTERS HAVE GENERALLY BEEN ADOPTED HOWEVER EXTENDED TO 2.5m IN SOME LOCATIONS TO REDUCE THE NUMBER OF PITS REQUIRED DUE TO FLAT ROAD GRADES.

BLACKTOWN CITY COUNCIL STANDARD DRAWINGS

STANDARD KERB AND GUTTER	A(BS)101M
STANDARD RESIDENTIAL FOOTWAY AND LAYBACK CROSSING	A(BS)102S
PATH PAVING AT INTERSECTIONS AND KERB RAMP DETAILS	A(BS)104M
STANDARD GRATED GULLY PIT	A(BS)106M
STANDARD JUNCTION PIT	A(BS)107M
MINOR DRAINAGE CONNECTIONS	A(BS)108M
STANDARD SURFACE INLET PITS	A(BS)109M
STEP IRONS	A(BS)111
STANDARD STREET SIGNS AND POSTS	A(BS)113M
CONSTRUCTION OF TRAFFIC "SHAKE-DOWN"	A(BS)115M
CHANNEL CHECK DAMS AND CULVERT INLET PROTECTION	A(BS)116S
SEDIMENTATION BASIN	A(BS)117S
SEDIMENT TRAPS FOR SURFACE INLET PITS	A(BS)119S
SEDIMENT FENCE AND FILTERS	A(BS)121M
SILTATION TRAPS FOR KERB INLETS	A(BS)122S
PERIMETER AND DIVERSION BANKS	A(BS)123M
STANDARD BICYCLE PATH	A(BS)134S

SUPPLEMENTARY DRAWINGS

TRAFFIC SIGNALS AT NORTHBOURNE DRIVE AND GLENGARRIE ROAD	18060_VV0000_GARFIELDNORTH BOURNEMARSDENPARK
RICHMOND ROAD - MARSDEN PARK, PROPOSED S94 WORKS - TC07 OUTLET HEADWALL	11041905CC35-1

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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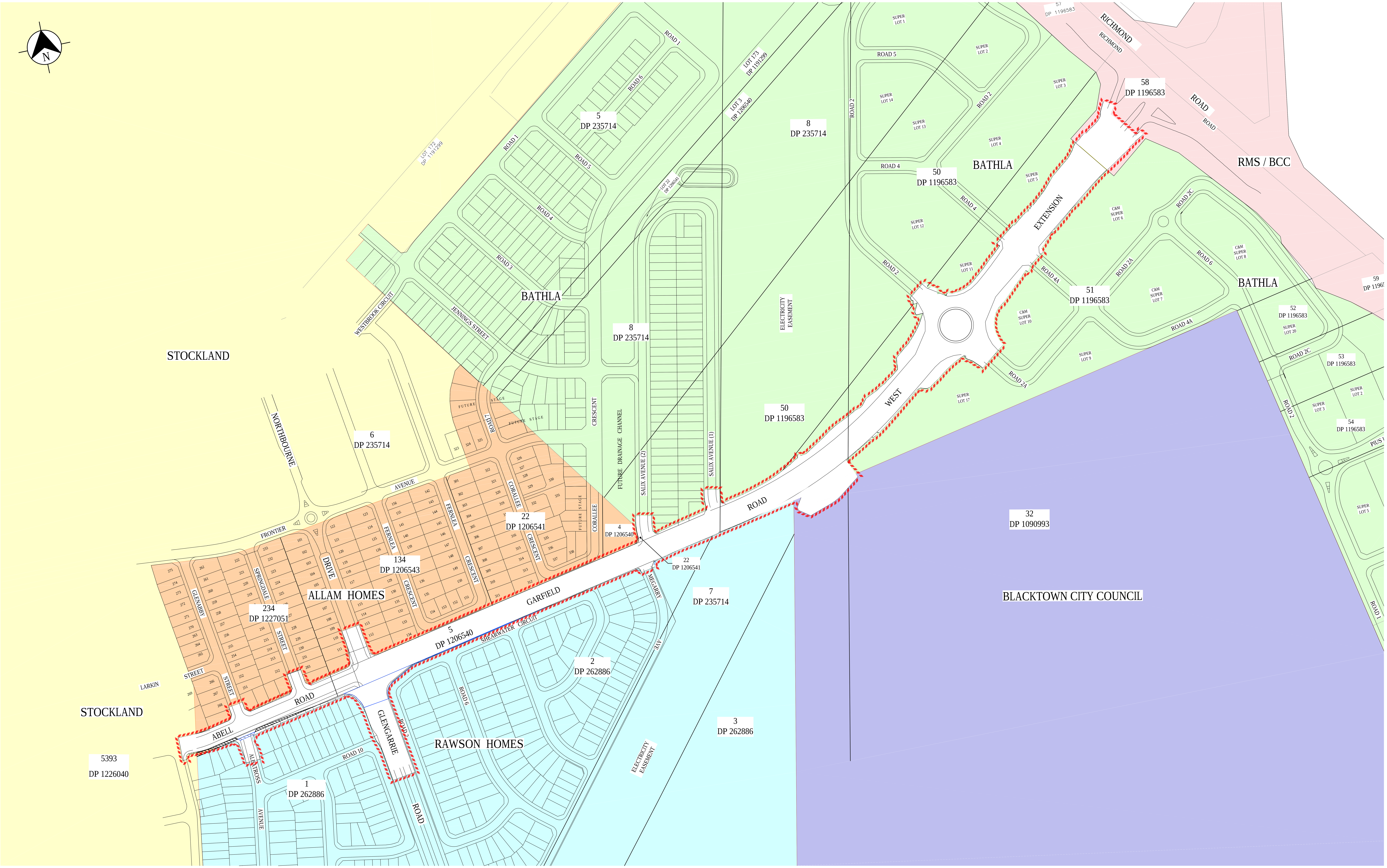
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

NOTES AND SUPPLEMENTARY DRAWINGS

PLAN No: 110350-CC-003 I
FILE No: 110350-CC-003
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:49:56 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-003.dwg



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1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
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E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18

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GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

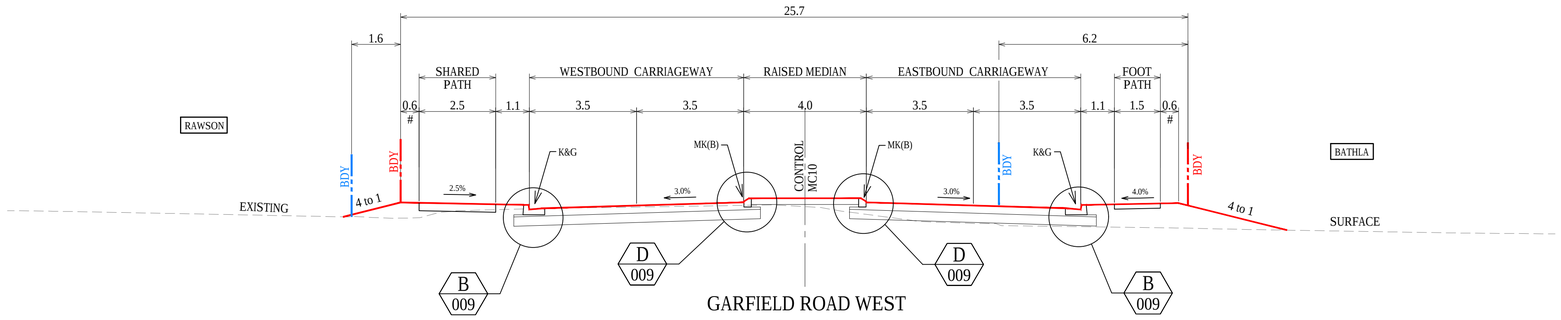
GENERAL ARRANGEMENT AND LAND OWNERSHIP

PLAN No: 110350-CC-004 I
FILE No: 110350-CC-004
SHEET SIZE: A1 ORIGINAL

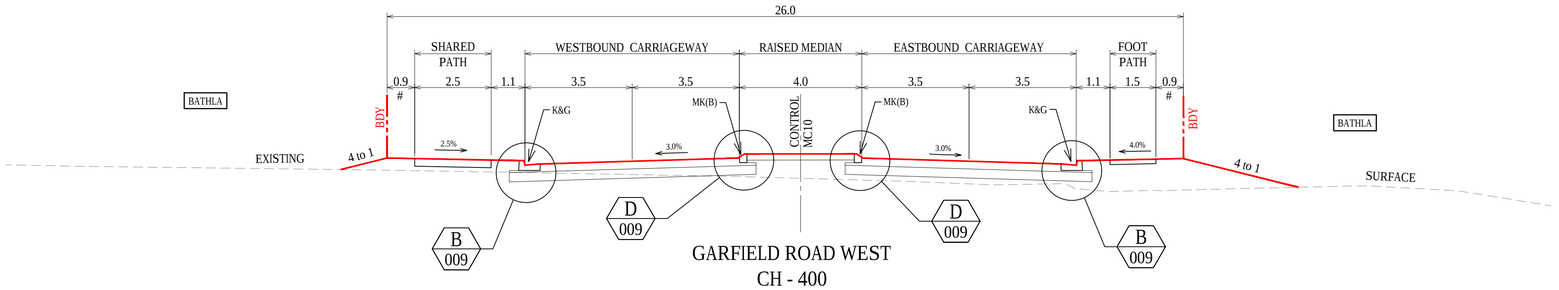
Plotted: 15 February , 2019 9:50:06 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-004.dwg

LEGEND

BDY	EXISTING PROPERTY BOUNDARY
BDY	NEW ROAD BOUNDARY
BATHLA	ADJOINING PROPERTY DEVELOPER
#	DENOTES LOCATION OF STREET LIGHTING



GARFIELD ROAD WEST
CH - 600



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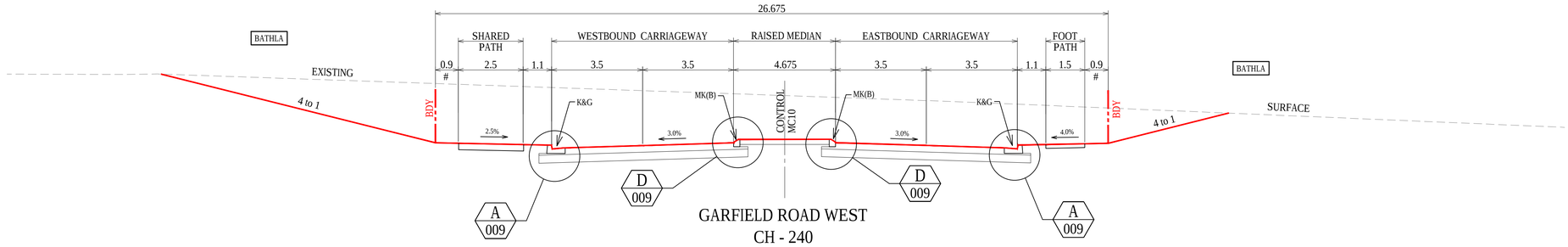
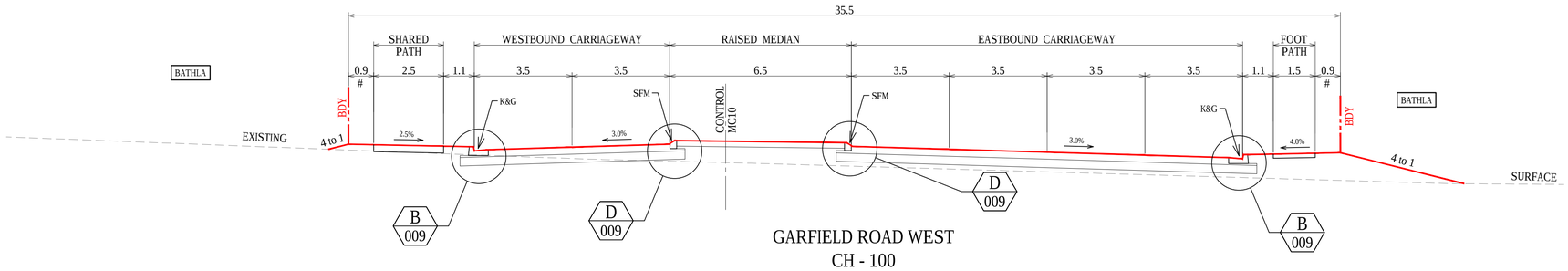
CH - 400



GARFIELD ROAD WEST
CH - 240



GARFIELD ROAD WEST
CH - 100

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
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GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

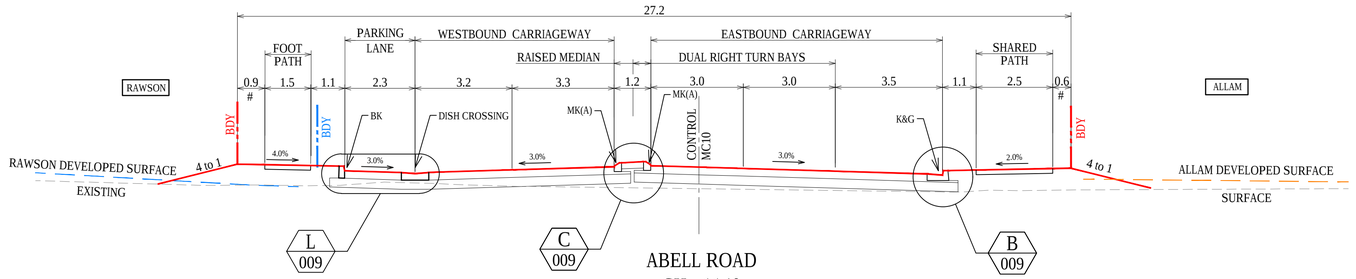
TYPICAL CROSS SECTIONS (SHEET 1 OF 3)

PLAN No: 110350-CC-005 I
FILE No: 110350-CC-005
SHEET SIZE: A1 ORIGINAL

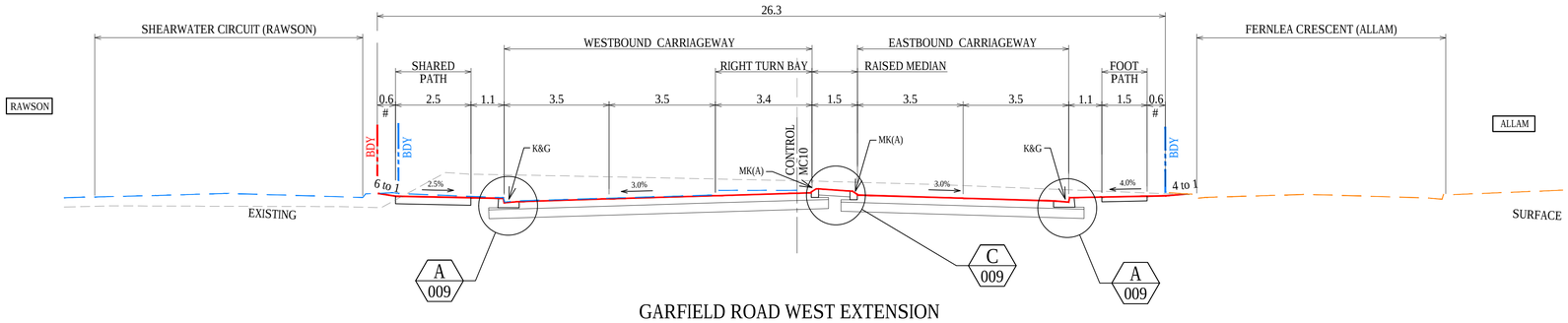
Plotted: 15 February, 2019 9:50:12 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-005.dwg

LEGEND

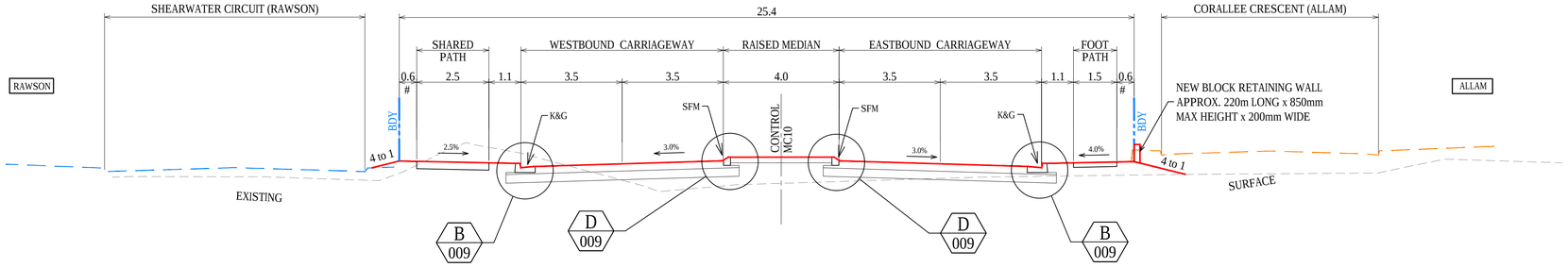
BDY	EXISTING PROPERTY BOUNDARY
BDY	NEW ROAD BOUNDARY
BATHLA	ADJOINING PROPERTY DEVELOPER
#	DENOTES LOCATION OF STREET LIGHTING



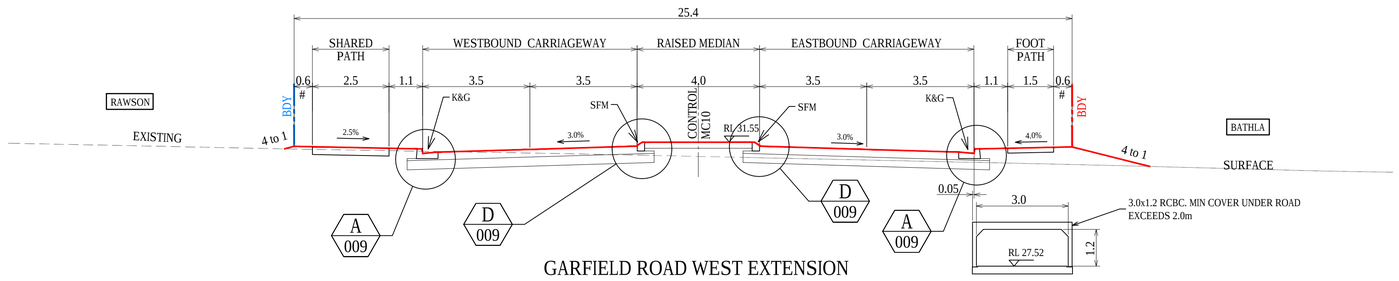
ABELL ROAD
CH - 1140



GARFIELD ROAD WEST EXTENSION
CH - 1000



GARFIELD ROAD WEST EXTENSION
CH - 840



GARFIELD ROAD WEST EXTENSION
CH - 700

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
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GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

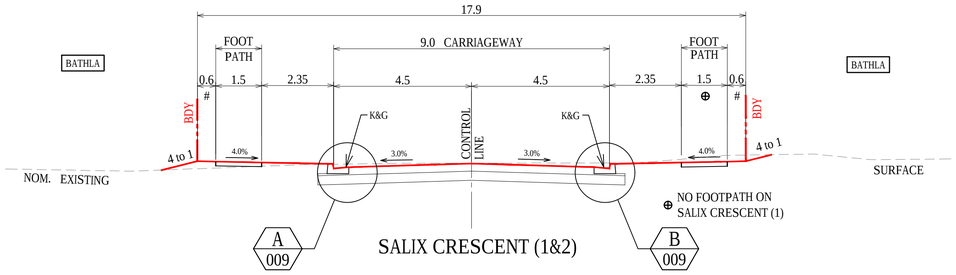
TYPICAL CROSS SECTIONS (SHEET 2 OF 3)

PLAN No: 110350-CC-006 I
FILE No: 110350-CC-006
SHEET SIZE: A1 ORIGINAL

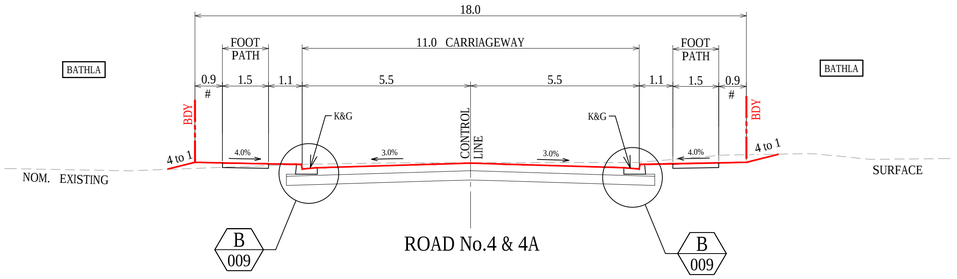
Plotted: 15 February , 2019 9:50:19 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-006.dwg

LEGEND

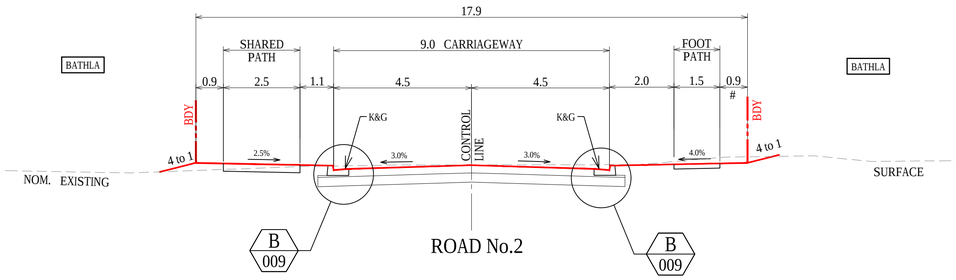
BDY (blue)	EXISTING PROPERTY BOUNDARY
BDY (red)	NEW ROAD BOUNDARY
BATHLA	ADJOINING PROPERTY DEVELOPER
#	DENOTES LOCATION OF STREET LIGHTING



SALIX CRESCENT (1&2)



ROAD No.4 & 4A



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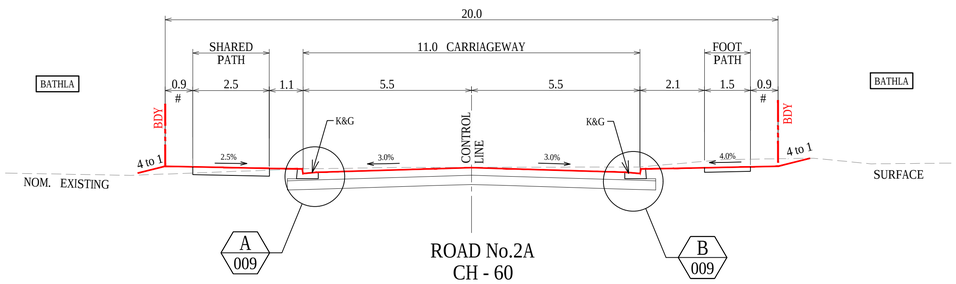
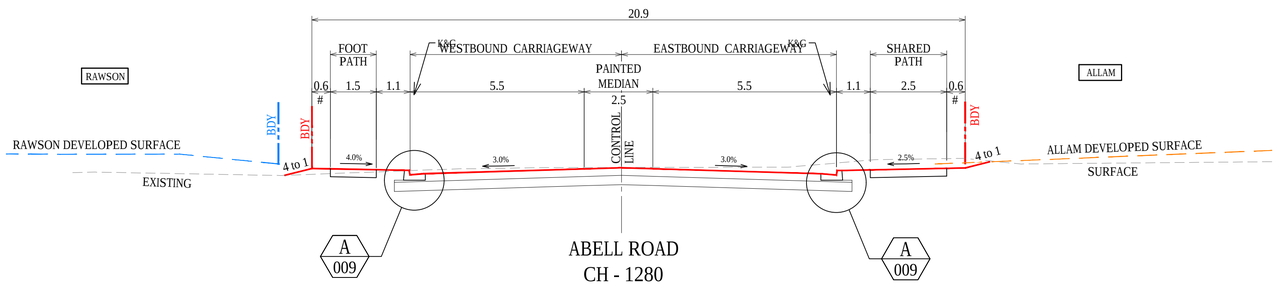
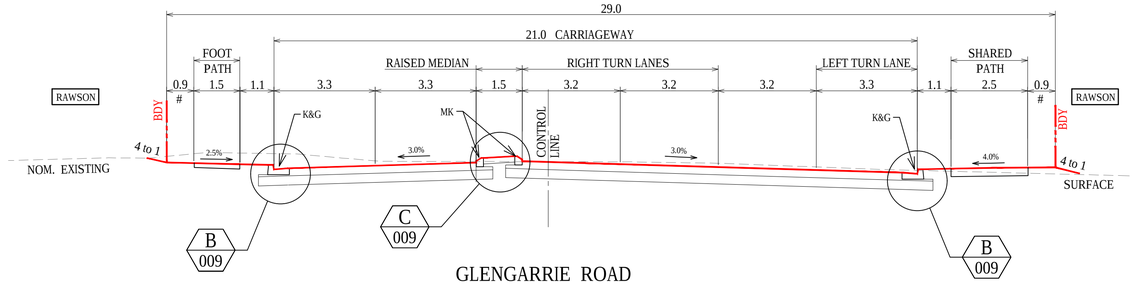


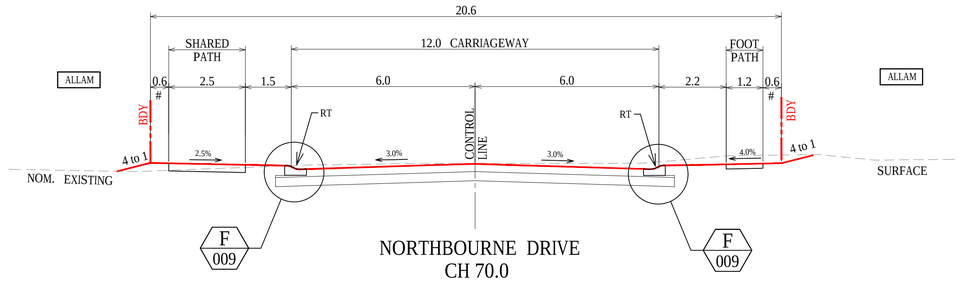
ROAD No.2A
CH - 60



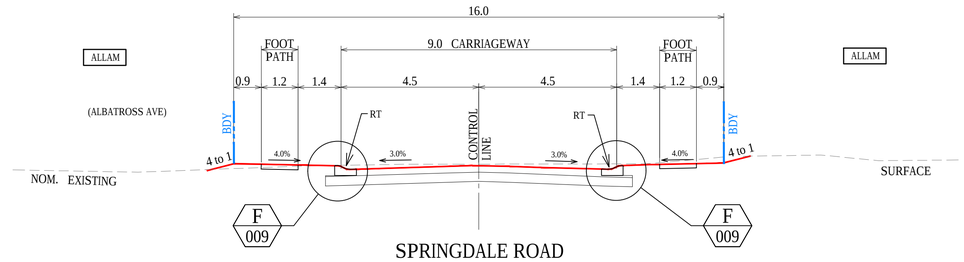
ABELL ROAD
CH - 1280



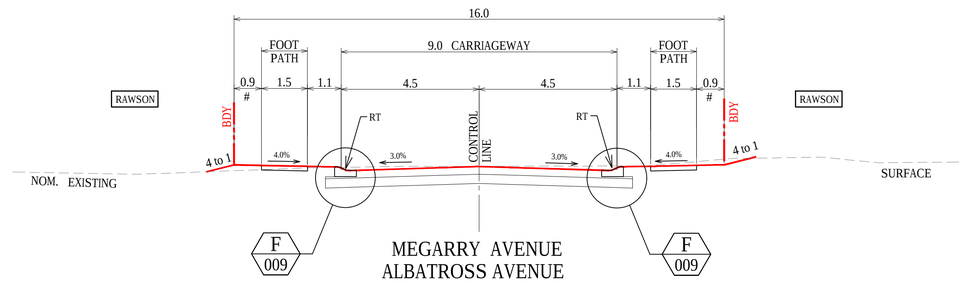
GLENGARRIE ROAD



NORTHBOURNE DRIVE
CH 70.0



SPRINGDALE ROAD
GLENABBY ROAD



MEGARRY AVENUE
ALBATROSS AVENUE

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
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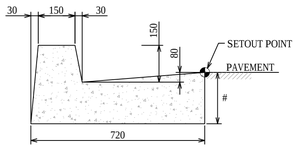
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

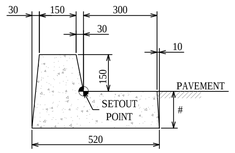
TYPICAL CROSS SECTIONS (SHEET 3 OF 3)

PLAN No: 110350-CC-007 H
FILE No: 110350-CC-007
SHEET SIZE: A1 ORIGINAL

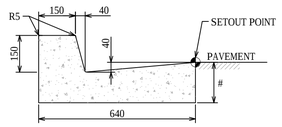
Plotted: 15 February , 2019 9:50:26 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-007.dwg



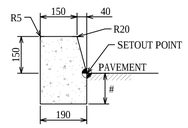
RMS TYPE SA KERB
(MODIFIED)
SCALE 1:50



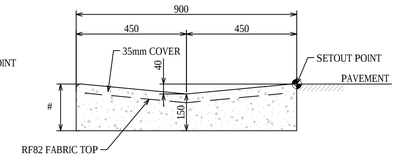
RMS TYPE SL KERB
(MODIFIED)
SCALE 1:50



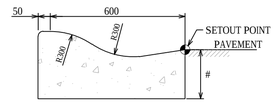
BCC KERB AND GUTTER (K&G)
(MODIFIED)
SCALE 1:50



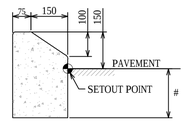
BCC KERB ONLY (BK)
(MODIFIED)
SCALE 1:50



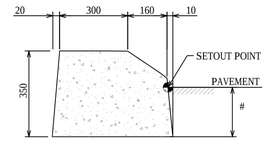
BCC DISH CROSSING
(MODIFIED)
SCALE 1:50



BCC ROLL TOP KERB AND GUTTER (RT)
(MODIFIED)
SCALE 1:50



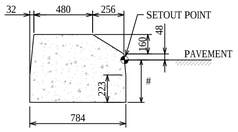
BCC MOUNTABLE KERB (MK) (A)
(MODIFIED)
SCALE 1:50



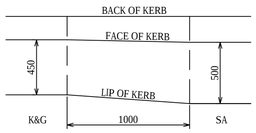
BCC MOUNTABLE KERB (MK) (B)
(MODIFIED)
SCALE 1:50

DEPTH TO MATCH PAVEMENT THICKNESS

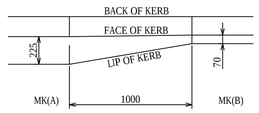
TYPICAL KERB DETAILS



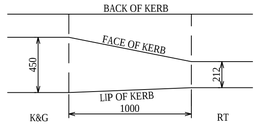
RMS TYPE SFM KERB (MODIFIED)
SCALE 1:50



TRANSITION FROM TYPE K&G
TO TYPE SA KERB
SCALE 1:25

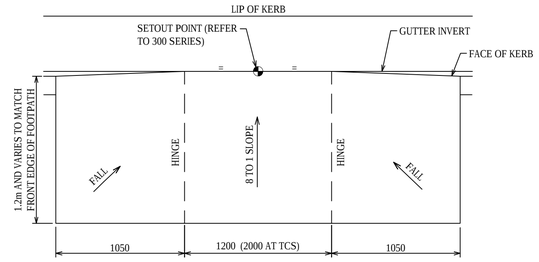


TRANSITION FROM TYPE MK (TYPE B)
TO MK (TYPE A) KERB
SCALE 1:25



TRANSITION FROM TYPE K&G
TO TYPE RT KERB
SCALE 1:25

TYPICAL KERB TRANSITIONS



TYPICAL KERB RAMP SETOUT DETAIL
SCALE 1:25

TYPICAL KERB RAMP SETTING OUT & DIMENSIONS
SUPERCEDS KERB RAMPS IN DESIGN MODEL.

- 50mm AC14 (AR450) WEARING COURSE
-14/10mm TWO COAT HOT BITUMEN FLUSH SEAL (RMS3151)
- 170mm (DGB20) BASE COURSE
- 290mm (DGS20) SUB-BASE
- 300mm CONTROLLED SUBGRADE
(SEE NOTE 4)

PAVEMENT TYPE 1
GARFIELD ROAD WEST -
NEW PAVEMENT
SCALE 1:25

-125mm THICK (25MPa) CONCRETE REINFORCED WITH SL62 MESH
50mm MINIMUM COVER (AS 3610 CLASS 3) SURFACE FINISH
-265 TO 290mm NOMINAL THICKNESS DGB20 OR APPROVED
EQUIVALENT BASE MATERIAL (SEE NOTE 5)
- 290mm (DGS20) SUB-BASE
- 300mm CONTROLLED SUBGRADE
(SEE NOTE 4)

PAVEMENT TYPE 4
NEW CONCRETE MEDIAN
ISLAND INFILL
SCALE 1:25

-125mm THICK (20MPa) CONCRETE REINFORCED WITH SL62 MESH
35mm MINIMUM COVER
-265 mm THICK SAND BEDDING
- COMPACTED SUBGRADE (REFER TO BLACKTOWN CITY
COUNCIL STANDARD DRAWING A(BS)102S)

PAVEMENT TYPE 7
NEW FOOTWAY CROSSING (DRIVEWAYS)
SCALE 1:25

- 75mm AC14 (SBS-PMB) WEARING COURSE
-14/10mm TWO COAT HOT BITUMEN FLUSH SEAL (RMS 3151)
- 170mm (DGB20) BASE COURSE
- 290mm (DGS20) SUB-BASE
- 300mm CONTROLLED SUBGRADE
(SEE NOTE 4)

PAVEMENT TYPE 2
GARFIELD ROAD WEST - BATHLA
ROAD ROUNDABOUT
SCALE 1:25

-125mm THICK (20MPa) CONCRETE REINFORCED WITH SL82 MESH WITH
50mm MINIMUM TOP COVER. (JOINTING TO BLACKTOWN CITY COUNCIL
STANDARD DRAWING A(BS)1345.)
-25mm THICK SAND BEDDING
-COMPACTED SUBGRADE

PAVEMENT TYPE 5
NEW SHARED PATH
SCALE 1:25

-200mm THICK (32MPa) PLAIN CONCRETE REINFORCED
WITH TWO LAYERS OF SL82 MESH, 40mm MINIMUM
COVER
-170mm MINIMUM THICKNESS (DGB20) BASE COURSE
-300mm CONTROLLED SUBGRADE
(SEE NOTE 4)

PAVEMENT TYPE 3
NEW CONCRETE ANULUS
SCALE 1:25

PAVEMENT TYPE 5
NEW CONCRETE PATH/KERB RAMPS
SCALE 1:25

PAVEMENT TYPE PROFILES

1:50 (AT A1) 100 0 100 200 300 400 500 MILLIMETRES

1:25(AT A1) 500 0 500 1000 1500 2000 2500 MILLIMETRES

NOTES:

1. FOR GENERAL NOTES AND STANDARD DRAWINGS REFER TO PLAN NO. CC-003
2. FOR PAVEMENT PLAN DETAILS REFER TO PLAN NO. CC-009
3. FOR GEOTECHNICAL INVESTIGATION PAVEMENT DESIGN, AND CONSTRUCTION DETAILS REFER TO REPORT 14286/2-AA BY GEOTECHNIQUE PTY LTD.
4. FINAL CONTROLLED SUBGRADE CONSTRUCTION OPTION TO BE CONFIRMED BY COUNCILS ENGINEER:
   - OPTION 1- 300mm CRUSHED SANDSTONE SELECT MATERIAL (CBR>30%)
   - OPTION 2- 300mm STABILISED SUBGRADE WITH 4% LIME
5. PAVEMENT TYPE 4 BASE COURSE THICKNESS :
   - 265mm ADJACENT TO KERB TYPES 'MK(A)' AND 'SL' / PAVEMENT TYPE 1
   - 290mm ADJACENT TO KERB TYPE 'MK(A)' / PAVEMENT TYPE 2

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J			21/12/18
A	PRELIMINARY DETAIL DESIGN ISSUED FOR REF APPROVAL	M.J.P	J.A.			28/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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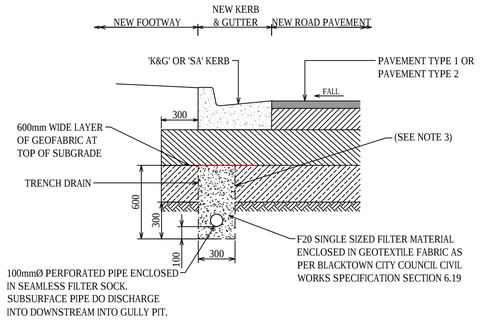
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

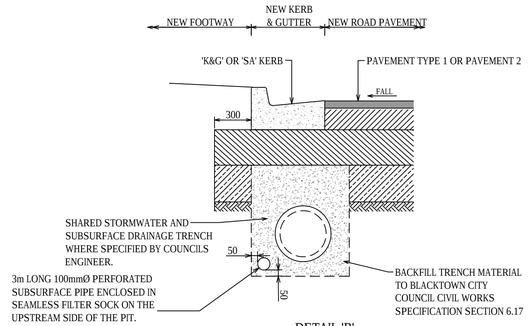
PAVEMENT & TYPICAL DETAILS (SHEET 1 OF 2)

PLAN No: 110350-CC-008 E
FILE No: 110350-CC-008
SHEET SIZE: A1 ORIGINAL

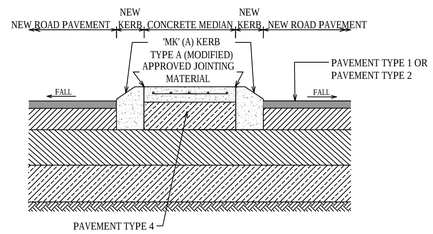
Plotted: 15 February , 2019 9:50:37 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-008.dwg



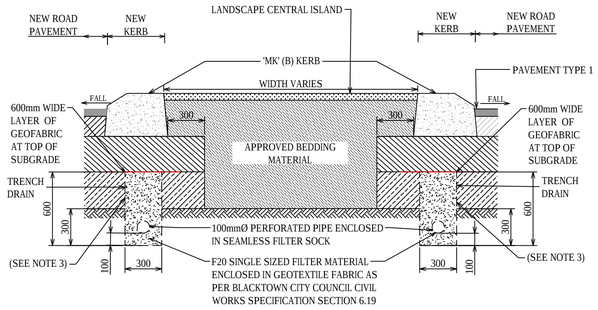
DETAIL 'A'
NEW 'K&G' OR 'SA' KERB- NEW PAVEMENT
TYPE 1 & TYPE 2
(WITH SUB-SURFACE DRAINAGE)
SCALE 1:25



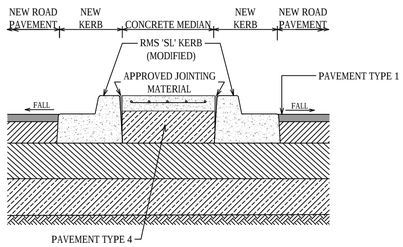
DETAIL 'B'
NEW 'K&G' OR 'SA' KERB - NEW PAVEMENT
TYPE 1
(WITH STORMWATER PIPE)
SCALE 1:25



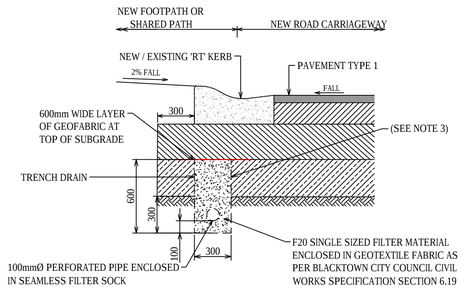
DETAIL 'C'
MK TYPE KERB - NEW PAVEMENT TYPE 1 &
TYPE 2 - CONCRETE MEDIAN
SCALE 1:25



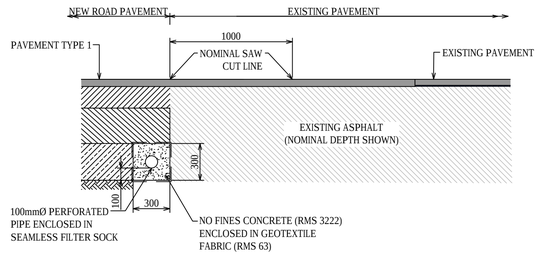
DETAIL 'D'
MK TYPE KERB - NEW PAVEMENT TYPE 1 -
LANDSCAPED MEDIAN
(WITH SUB-SURFACE DRAINAGE)
SCALE 1:25



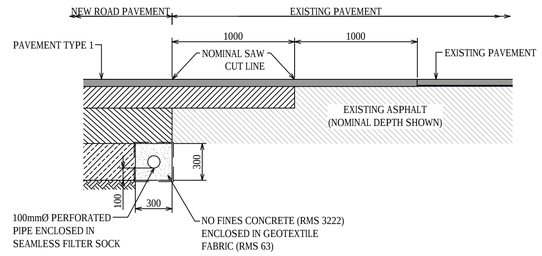
DETAIL 'E'
SL TYPE KERB - NEW PAVEMENT TYPE 1 -
CONCRETE MEDIAN
SCALE 1:25



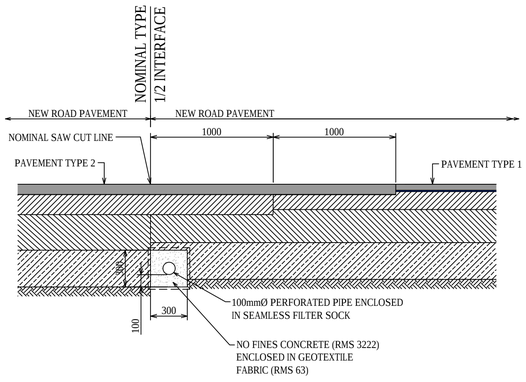
DETAIL 'F'
NEW KERB RT - ROAD PAVEMENT TYPE 1
(WITH SUB-SURFACE DRAINAGE)
SCALE 1:25



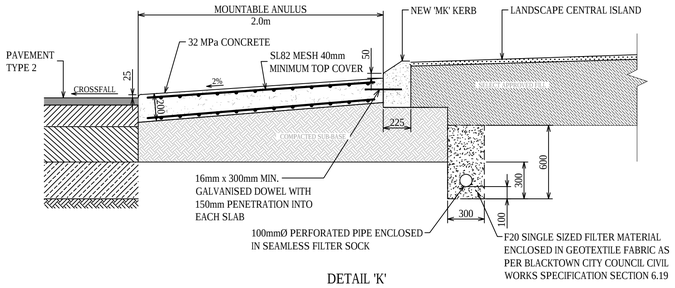
DETAIL 'G'
NEW PAVEMENT TYPE 1 - EXISTING PAVEMENT
(WITH SUB-SURFACE DRAINAGE)
SCALE 1:25



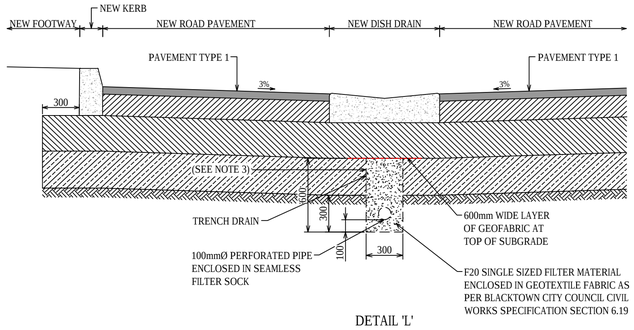
DETAIL 'H'
NEW PAVEMENT TYPE 1 -
EXISTING ROAD 500 -PRECINCT 5
STAGE 42
(WITH SUB-SURFACE DRAINAGE)
SCALE 1:25



DETAIL 'J'
NEW PAVEMENT TYPE 2 - NEW PAVEMENT TYPE 1
(WITH SUB-SURFACE DRAINAGE)
SCALE 1:25



DETAIL 'K'
ROUNDABOUT CENTRAL ISLAND DETAIL
SCALE 1:25



DETAIL 'L'
PARKING BAY DETAIL
SCALE 1:25

NOTES:

1. FOR GENERAL NOTES AND STANDARD DRAWINGS REFER TO PLAN NO. CC-003.
2. LOCATION OF SAWCUT LINES AND NEW PAVEMENT WORKS TO BE CONFIRMEDBY COUNCILS ENGINEER.
3. CONSTRUCT CONTROLLED SUBGRADE LAYER WIDE ENOUGH SO THAT WHEN IT IS EXCAVATED TO INSTALL THE SUBSURFACE DRAINAGE LINE, THE REMAINING EDGE OF THE CONTROLLED LAYER WILL BE FULLY COMPACTED.
4. BASE OF NEW KERBS TO BE CONSTRUCTED ON DESIGN CROSSFALL.
5. FOR PAVEMENT AND KERB DETAILS REFER TO PLAN NO. CC-008.

1:25(AT A1)

500 0 500 1000 1500 2000 2500
MILLIMETRES

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J			21/12/18
A	PRELIMINARY DETAIL DESIGN ISSUED FOR REF APPROVAL	M.J.P	J.A.			28/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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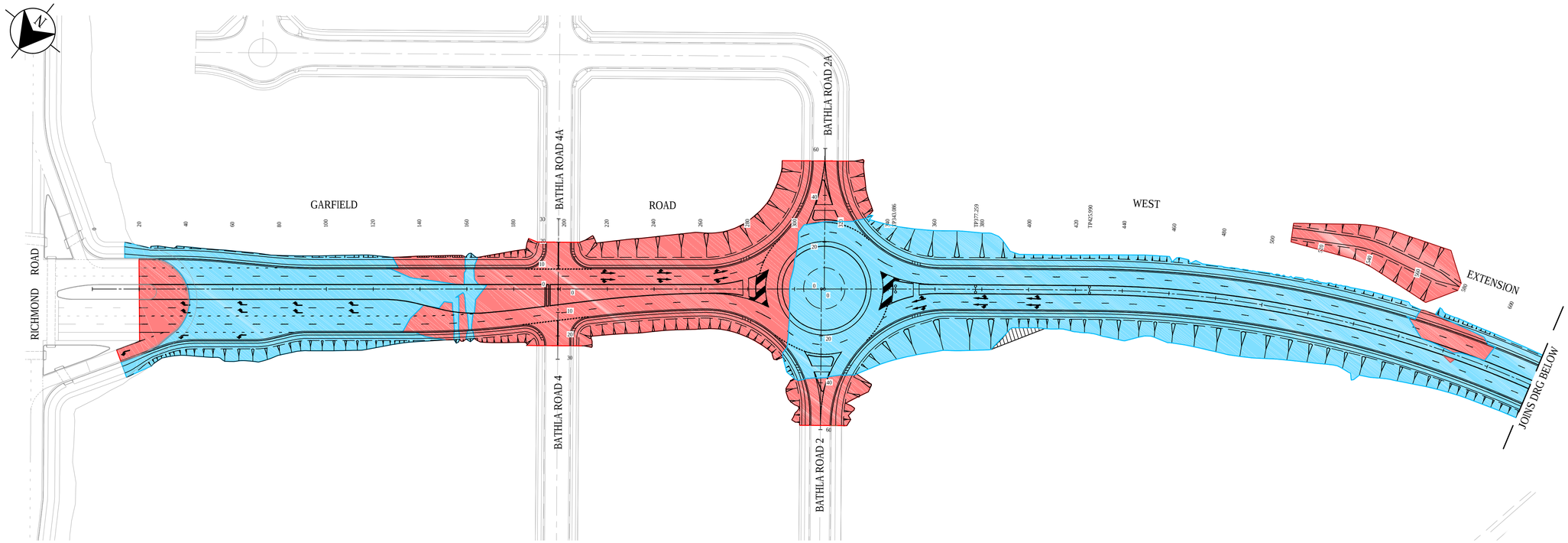
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PAVEMENT & TYPICAL DETAILS (SHEET 2 OF 2)

PLAN No: 110350-CC-009 E
FILE No: 110350-CC-009
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:50:48 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-009.dwg

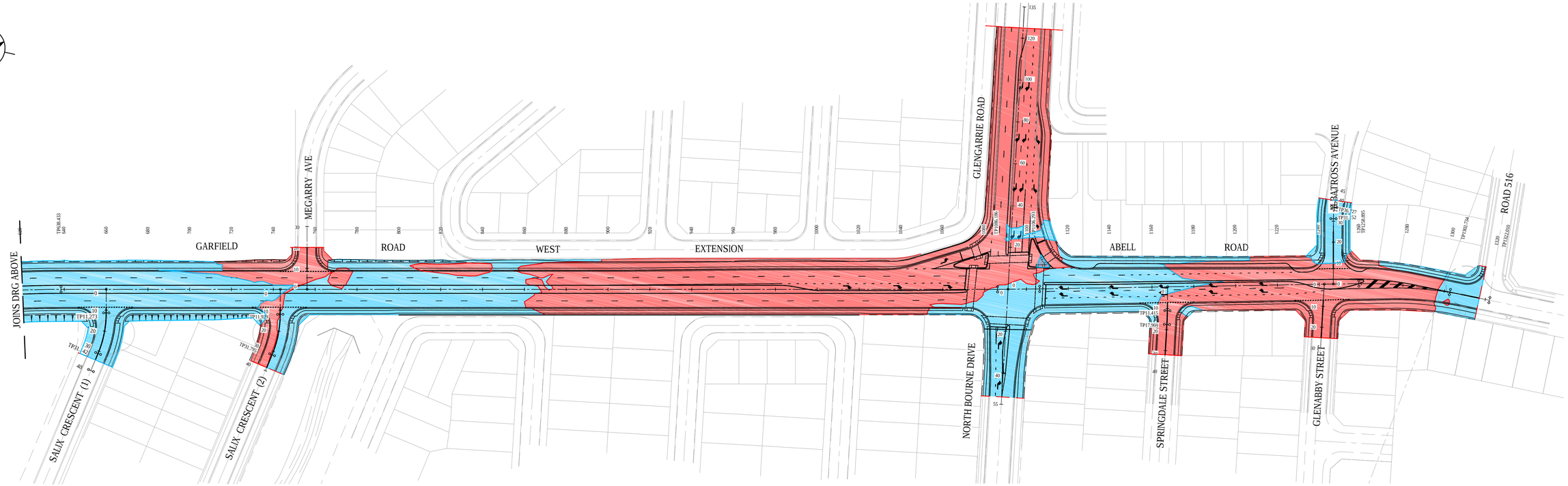


LEGEND

- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EARTHWORKS IN FILL 40,800m^3
- EARTHWORKS IN CUT 13,800m^3

NOTES

1. FOR GENERAL NOTES AND SUPPLEMENTARY DRAWINGS REFER TO DRG 110350-CC-003.



1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

F	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
E	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
C	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
A	PRELIMINARY DETAIL DESIGN ISSUED FOR COUNCIL REVIEW	M.J.P	T.L.J	R.O.	D.J.	7/11/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

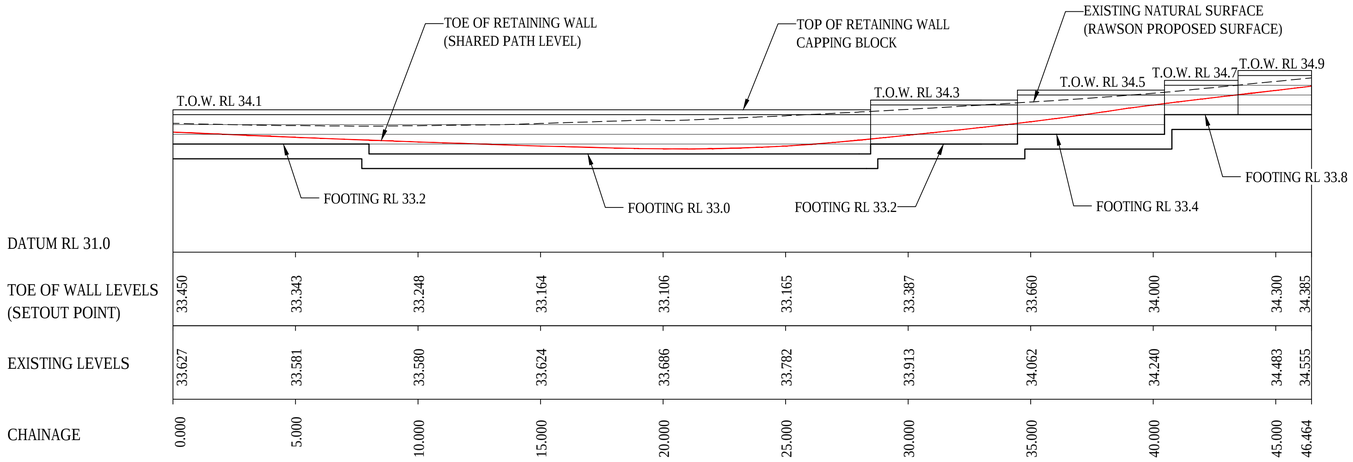
EARTHWORKS CUT-FILL PLAN

PLAN No: 110350-CC-010 F
FILE No: 110350-CC-010
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:51:00 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-010.dwg

NOTES

1. FOR GENERAL NOTES AND STANDARD DRAWINGS REFER TO PLAN CC-003
2. FOR TYPICAL DETAILS OF RETAINING WALLS REFER TO PLAN CC-206



RETAINING WALL PROFILE - MW10

RETAINING WALL - MW10					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.0000	298017.708	6268858.852	241° 27' 22.8"	
T.P.	18.820	298001.176	6268849.859	241° 27' 22.8"	
CENTRE					-17.800
T.P.	40.567	297992.079	6268831.578	171° 27' 13.2"	
END	46.464	297992.955	6268825.747	171° 27' 13.2"	

1:25 (AT A1) 500 0 500 1000 1500 2000 2500 MILLIMETRES

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	CLIENT ISSUE FOR INFORMATION	M.J.P	T.L.J			22/01/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J			21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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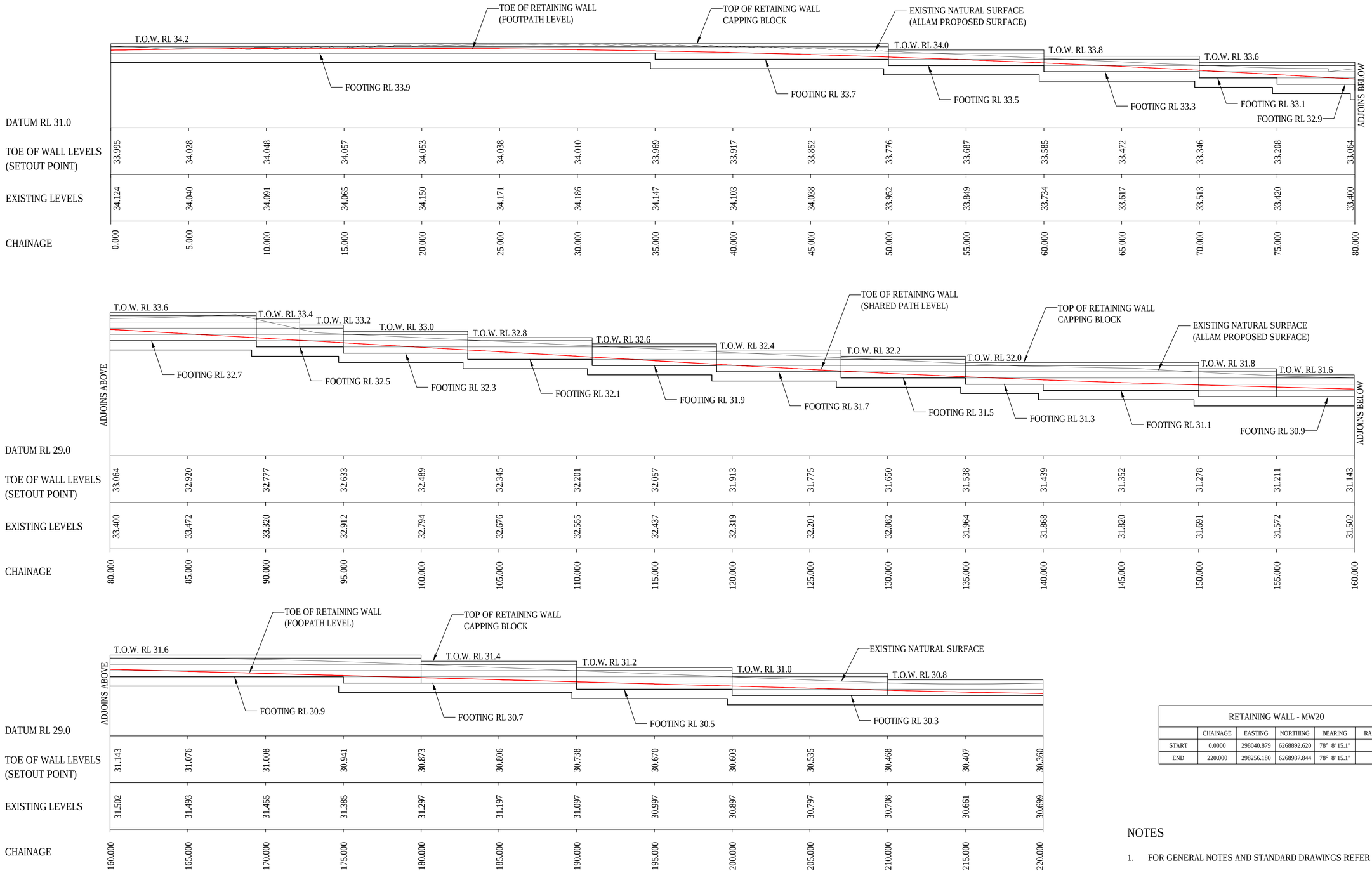
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

RETAINING WALL PROFILE - MW10

PLAN No: 110350-CC-011 E
FILE No: 110350-CC-011
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:51:11 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-011.dwg



RETAINING WALL PROFILE - MW20

RETAINING WALL - MW20					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.0000	298040.879	6268892.620	78° 8' 15.1"	
END	220.000	298256.180	6268937.844	78° 8' 15.1"	

NOTES

1. FOR GENERAL NOTES AND STANDARD DRAWINGS REFER TO PLAN CC-003
2. FOR TYPICAL DETAILS OF RETAINING WALLS REFER TO PLAN CC-206

1:25(AT A1)

500 0 500 1000 1500 2000 2500

MILLIMETRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J			21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

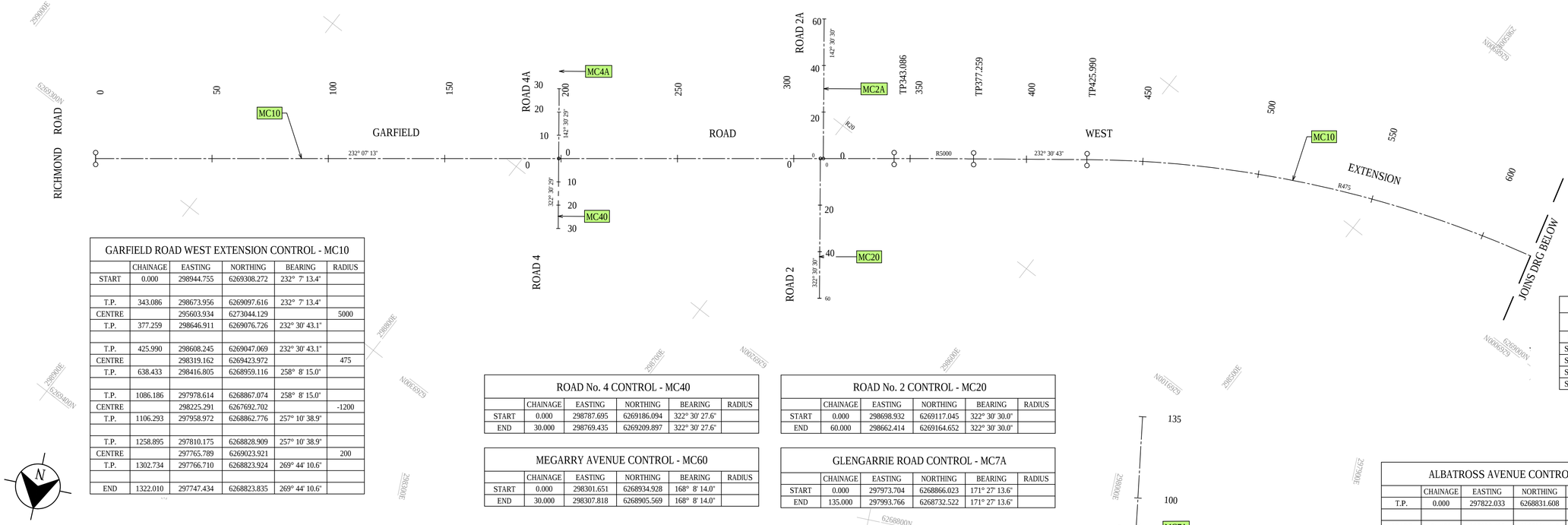
RETAINING WALL PROFILE - MW20

PLAN No: 110350-CC-012 D
FILE No: 110350-CC-012
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:51:22 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-012.dwg

ROAD No. 4A CONTROL - MC4A					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298787.695	6269186.094	142° 30' 29.0"	
END	30.000	298805.954	6269162.291	142° 30' 29.0"	

ROAD No. 2A CONTROL - MC2A					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298698.932	6269117.045	322° 30' 32.0"	
END	60.000	298662.414	6269164.652	322° 30' 32.0"	



NOTES

1. FOR GENERAL NOTES AND SUPPLEMENTARY DRAWINGS REFER TO DRG 110350-CC-003.
2. SURVEY WAS UNDERTAKEN BY RPS SURVEYORS, MAY 2018.
3. ALL SURVEY CONTROL INFORMATION IS TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. ANY SURVEY PM'S OR SSM'S THAT ARE DESTROYED ARE TO BE REPLACED WITH ANOTHER PM OR SSM TO LAND & PROPERTY INFORMATION (LPI) STANDARDS. IT ALSO SHOULD BE COORDINATED AND DOCUMENTED TO EQUIVALENT STANDARDS. PENALTIES MAY APPLY FOR NON-COMPLIANCE.
5. PURSUANT TO THE SURVEYING & SPATIAL INFORMATION ACT, ANY CADASTRAL REFERENCE MARKS THAT ARE ON KERBS, FOOTPATHS OR SIMILAR THAT MAY BE AFFECTED BY CONSTRUCTION OR MAINTENANCE, NEED TO BE IDENTIFIED AND SURVEYED BY A REGISTERED LAND SURVEYOR BEFORE THEY ARE DESTROYED OR DISTURBED. PERSONAL FINES APPLY FOR BREACHES OF THE ACT.

LEGEND

- PM 46785 RL 33.833 — EXISTING SURVEY MARK
- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY

SURVEY CONTROL POINTS				
POINT	EASTING	NORTHING	RL	DESCRIPTION
PM46785	298407.068	6268915.422	31.833	
SSM196944	298050.675	6268896.377	34.004	
SSM196945	298111.589	6268920.616	33.259	
SSM196950	297975.332	6268896.359	32.402	
SSM196966	298099.868	6269077.795	30.195	

GARFIELD ROAD WEST EXTENSION CONTROL - MC10					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298944.755	6269308.272	232° 7' 13.4"	
T.P.	343.086	298673.956	6269097.616	232° 7' 13.4"	
CENTRE		295603.934	6273044.129		5000
T.P.	377.259	298646.911	6269076.726	232° 30' 43.1"	
T.P.	425.990	298608.245	6269047.069	232° 30' 43.1"	
CENTRE		298319.162	6269423.972		475
T.P.	638.433	298416.805	6268959.116	258° 8' 15.0"	
T.P.	1086.186	297978.614	6268867.074	258° 8' 15.0"	
CENTRE		298225.291	6267692.702		-1200
T.P.	1106.293	297958.972	6268862.776	257° 10' 38.9"	
T.P.	1258.895	297810.175	6268828.909	257° 10' 38.9"	
CENTRE		297765.789	6269023.921		200
T.P.	1302.734	297766.710	6268823.924	269° 44' 10.6"	
END	1322.010	297747.434	6268823.835	269° 44' 10.6"	

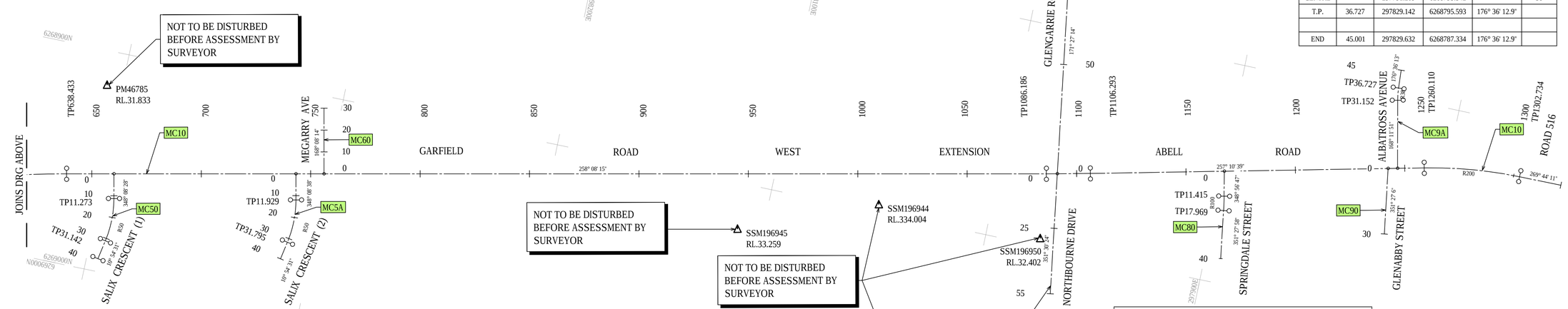
ROAD No. 4 CONTROL - MC40					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298787.695	6269186.094	322° 30' 27.6"	
END	30.000	298769.435	6269209.897	322° 30' 27.6"	

ROAD No. 2 CONTROL - MC20					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298698.932	6269117.045	322° 30' 30.0"	
END	60.000	298662.414	6269164.652	322° 30' 30.0"	

MEGARRY AVENUE CONTROL - MC60					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298301.651	6268934.928	168° 8' 14.0"	
END	30.000	298307.818	6268905.569	168° 8' 14.0"	

GLENGARRIE ROAD CONTROL - MC7A					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297973.704	6268866.023	171° 27' 13.6"	
END	135.000	297993.766	6268732.522	171° 27' 13.6"	

ALBATROSS AVENUE CONTROL - MC9A					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
T.P.	0.000	297822.033	6268831.608	168° 11' 50.6"	
START	31.152	297828.405	6268801.115	168° 11' 50.6"	
CENTRE		297791.209	6268793.342		38
T.P.	36.727	297829.142	6268795.593	176° 36' 12.9"	
END	45.001	297829.632	6268787.334	176° 36' 12.9"	



SALIX CRESCENT (1) CONTROL - MC50					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298395.624	6268954.667	348° 8' 27.5"	
T.P.	11.273	298393.307	6268965.700	348° 8' 27.5"	
END	31.142	298393.144	6268985.437	10° 54' 31.3"	
T.P.		298442.240	6268975.975		50.000 19.869 2
END	40.000	298394.820	6268994.135	10° 54' 31.3"	

SALIX CRESCENT (2) CONTROL - MC5A					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298314.221	6268937.568	348° 8' 38.3"	
T.P.	11.929	298311.770	6268949.243	348° 8' 38.3"	
CENTRE		298360.703	6268959.516		50
T.P.	31.795	298311.607	6268968.978	10° 54' 31.4"	
END	40.000	298313.160	6268977.034	10° 54' 31.4"	

NORTHBOURNE DRIVE CONTROL - MC70					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297973.704	6268866.023	351° 30' 24.4"	
END	55.000	297965.581	6268920.420	351° 30' 24.4"	

SPRINGDALE STREET CONTROL - MC80					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297899.251	6268849.183	348° 56' 46.8"	
T.P.	11.415	297897.062	6268860.387	348° 56' 46.8"	
CENTRE		298044.280	6268889.146		150
T.P.	17.968	297895.947	6268866.843	351° 26' 56.8"	
END	40.000	297892.961	6268888.630	351° 26' 56.8"	

GLENABBY STREET CONTROL - MC90					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297826.267	6268832.571	351° 27' 8.4"	
END	30.000	297821.808	6268862.238	351° 27' 8.4"	

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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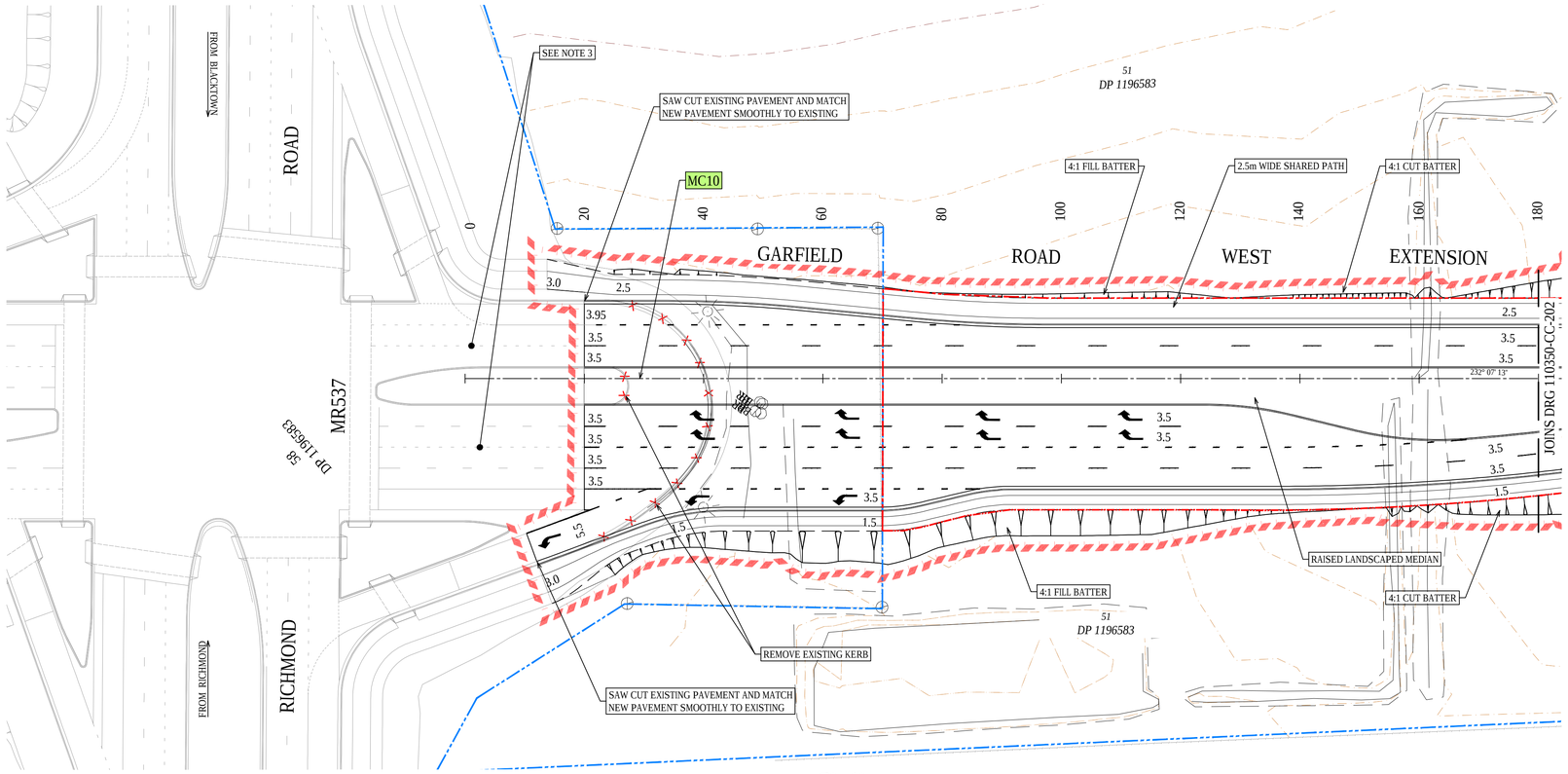
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

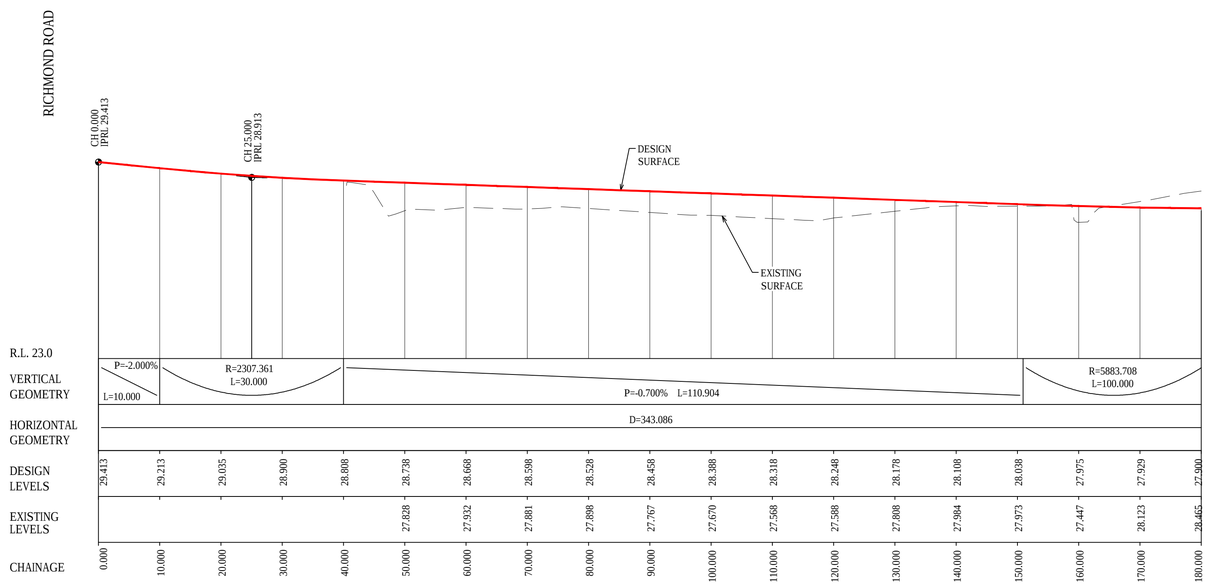
ALIGNMENT AND SURVEY CONTROL

PLAN No: 110350-CC-101 I
FILE No: 110350-CC-101
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:51:31 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-101.dwg



PLAN



LONGITUDINAL SECTION - GARFIELD ROAD WEST EXTENSION - MC10

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS, REFER TO 110350-CC-003
2. EXISTING LINEMARKING AND SIGN POSTING IS TO BE RETAINED WHERE NOT DIRECTLY IMPACTED BY THE ROADWORKS
3. FOR DETAILS REGARDING DAM BACKFILLING BETWEEN CH300-CH390, CH467-CH545 AND CH777-CH824, REFER TO THE GEOTECHNICAL REPORT REGARDING ELARA STAGE 42 REFERENCE 14286/2-AA ON 21 AUGUST 2018
4. LINEMARKING INCLUDING REFLECTORS WITHIN EXISTING SECTIONS OF PAVEMENT ON APPROACH TO RICHMOND ROAD INTERSECTION IS TO BE ASSESSED AND REAPPLIED IF DEEMED NECESSARY OR AS DIRECTED BY THE PROJECT ENGINEER

LEGEND

- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING TREES
- TREES TO BE REMOVED
- DAM AREA TO BE BACKFILLED
- EXISTING CONCRETE KERB TO BE REMOVED

V 1:100 (AT A1) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:500 (AT A1)
1:1000 (AT A3) — 10 0 10 20 30 40 50 METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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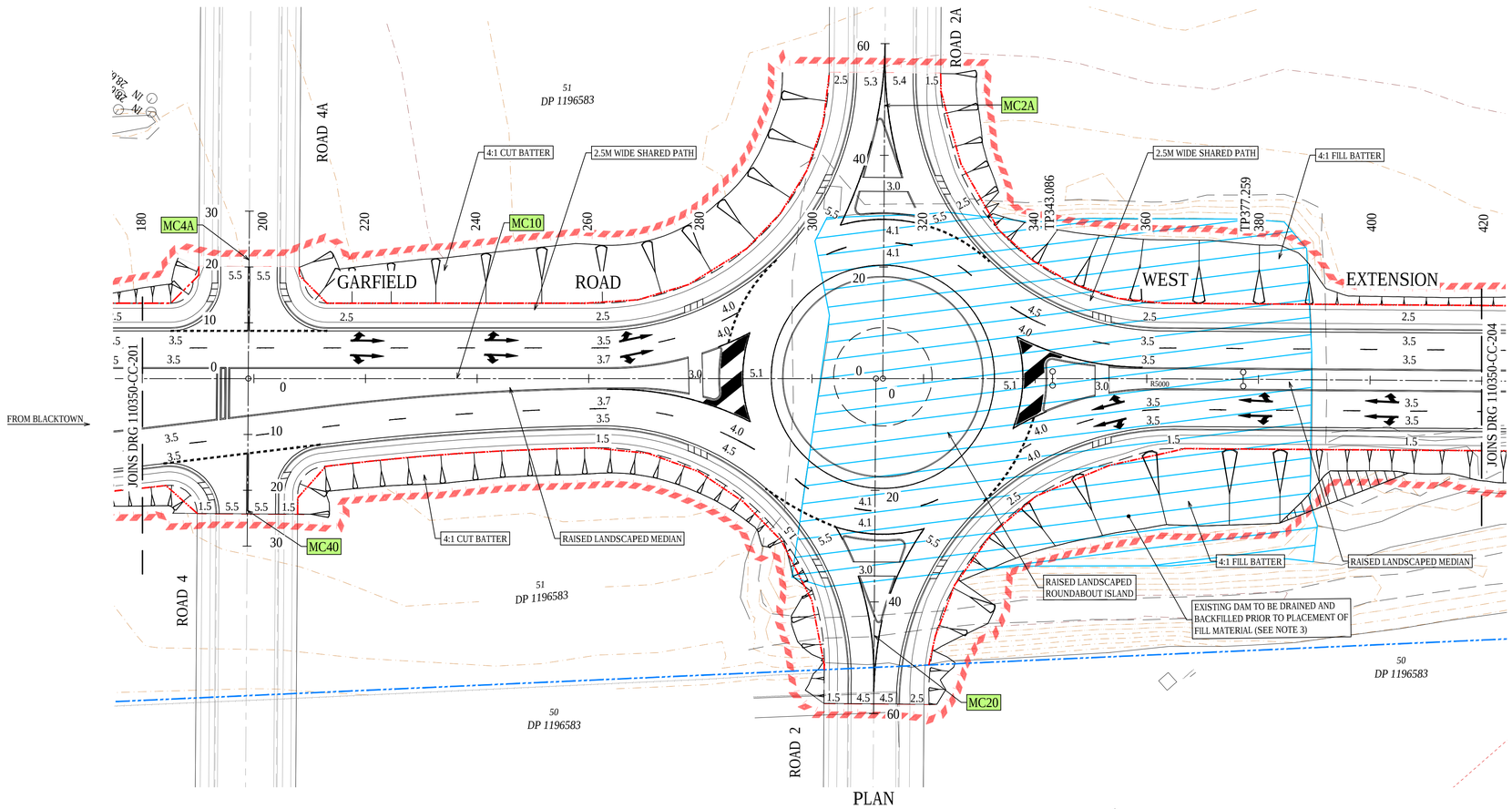
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

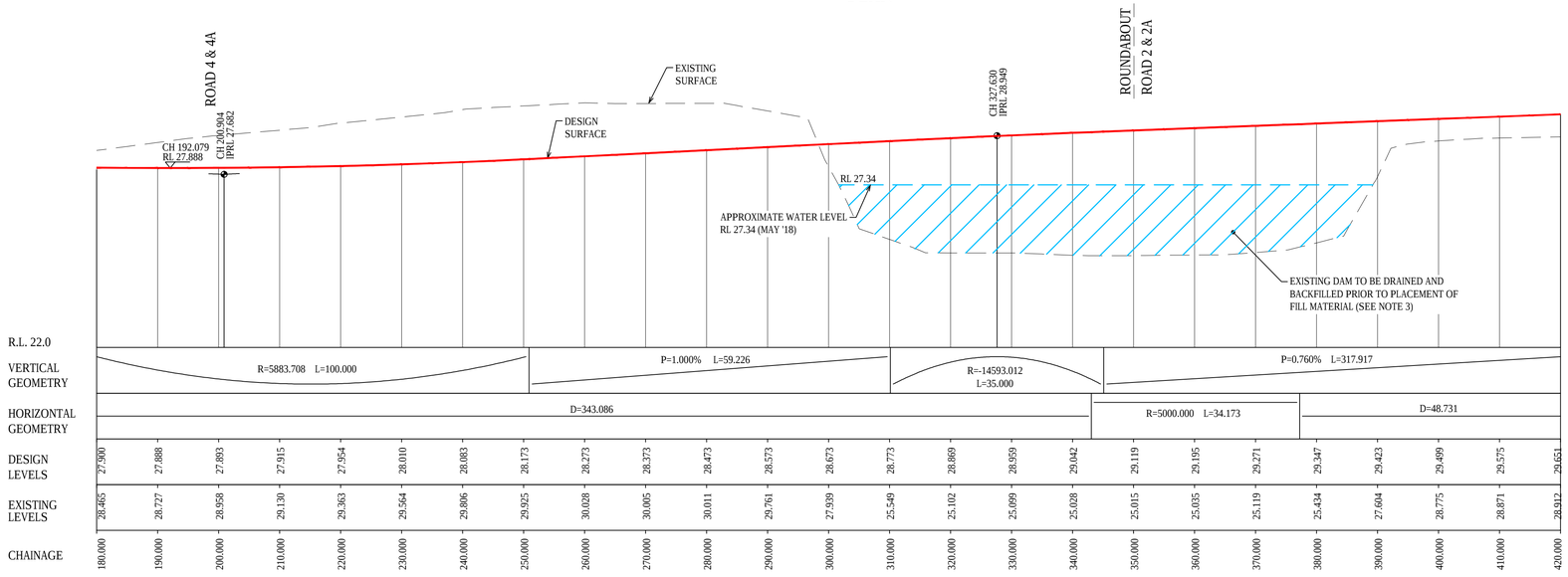
PLAN AND LONGITUDINAL SECTION (SHEET 1 OF 8)

PLAN No: 110350-CC-201 I
FILE No: 110350-CC-201
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:51:47 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-201.dwg



PLAN



LONGITUDINAL SECTION - GARFIELD ROAD WEST EXTENSION - MC10

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS, REFER TO 110350-CC-003
2. EXISTING LINEMARKING AND SIGN POSTING IS TO BE RETAINED WHERE NOT DIRECTLY IMPACTED BY THE ROADWORKS
3. FOR DETAILS REGARDING DAM BACKFILLING BETWEEN CH300-CH390, CH467-CH545 AND CH777-CH824, REFER TO THE GEOTECHNICAL REPORT REGARDING ELARA STAGE 42 REFERENCE 14286/2-AA ON 21 AUGUST 2018
4. LINEMARKING INCLUDING REFLECTORS WITHIN EXISTING SECTIONS OF PAVEMENT ON APPROACH TO RICHMOND ROAD INTERSECTION IS TO BE ASSESSED AND REAPPLIED IF DEEMED NECESSARY OR AS DIRECTED BY THE PROJECT ENGINEER
5. FOR LONGITUDINAL SECTIONS OF MC20, MC2A, MC40 AND MC4A REFER TO DRAWING 110350-CC-203

LEGEND

- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING TREES
- TREES TO BE REMOVED
- DAM AREA TO BE BACKFILLED
- EXISTING CONCRETE KERB TO BE REMOVED

V 1:100 (AT A1) — METRES

1:500 (AT A1) 1:1000 (AT A3) — METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CLIENT: Stockland

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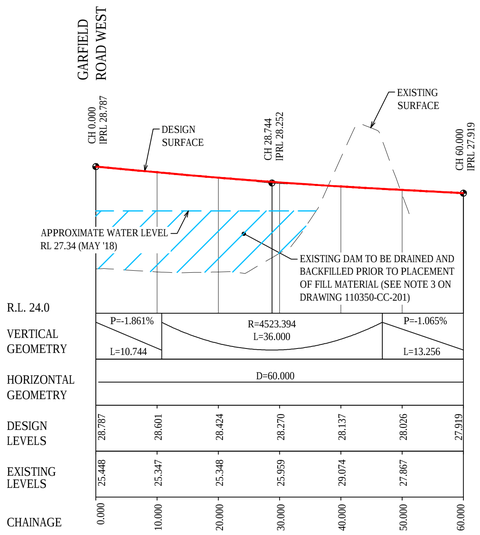
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

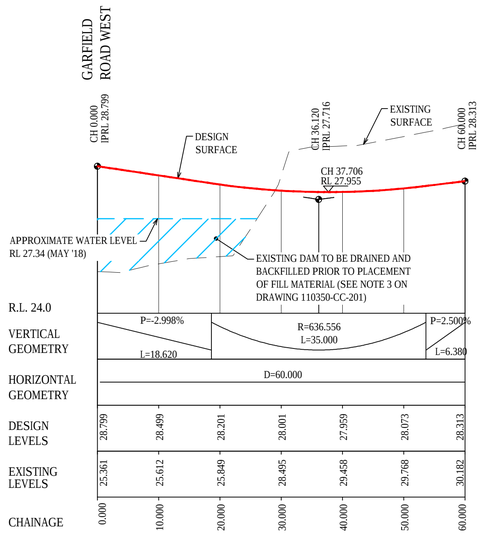
PLAN AND LONGITUDINAL SECTION (SHEET 2 OF 8)

PLAN No: 110350-CC-202 I
FILE No: 110350-CC-202
SHEET SIZE: A1 ORIGINAL

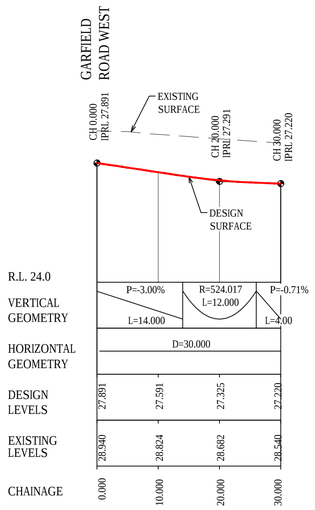
Plotted: 15 February , 2019 9:52:04 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-202.dwg



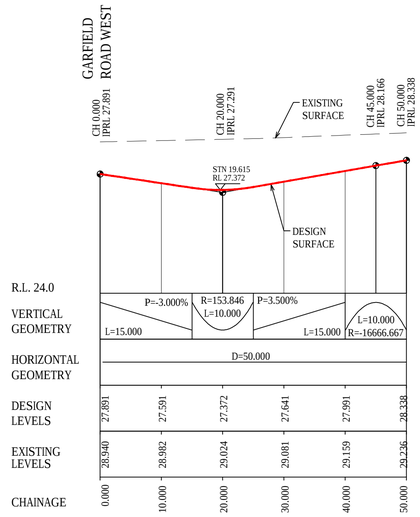
LONGITUDINAL SECTION - ROAD 2 - MC20



LONGITUDINAL SECTION - ROAD 2A - MC2A



LONGITUDINAL SECTION
ROAD 4 - MC40



LONGITUDINAL SECTION
ROAD 4A - MC4A

V 1:100 (AT A1) — METRES

1:500 (AT A1)
1:1000 (AT A3) — METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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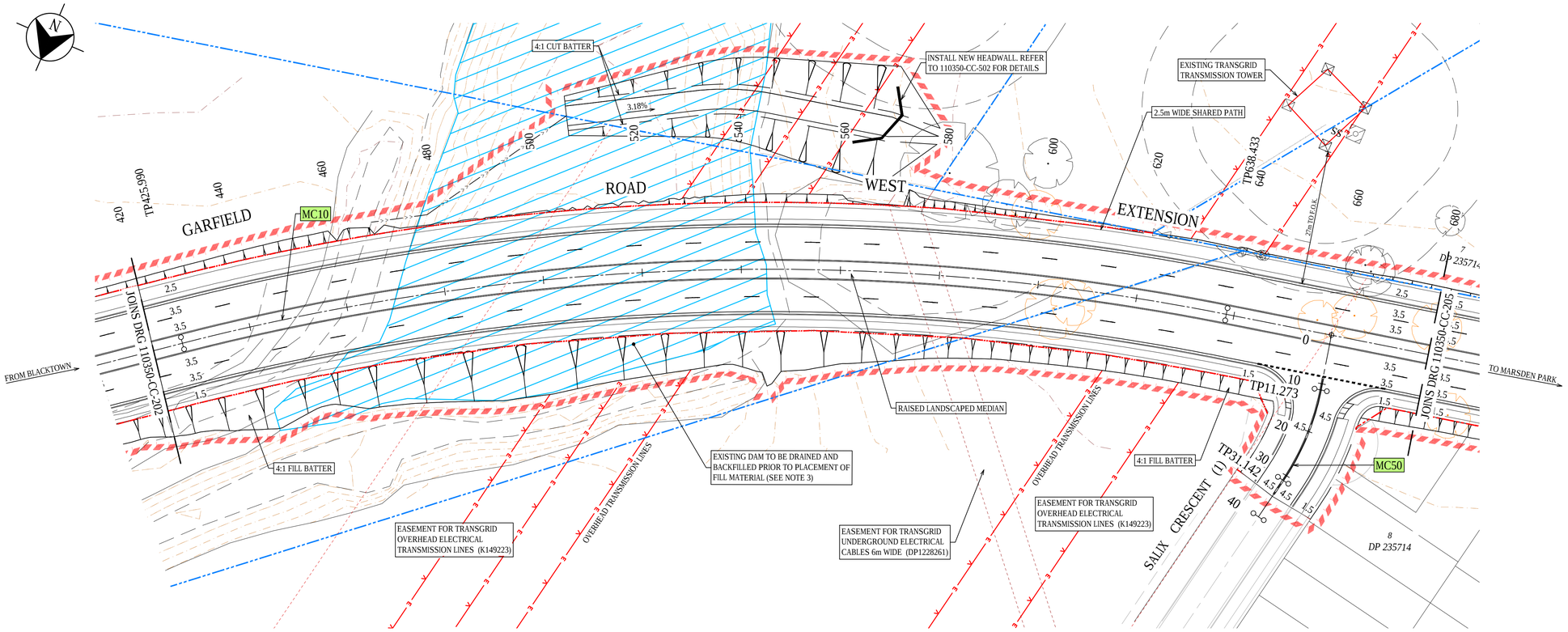
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PLAN AND LONGITUDINAL SECTION (SHEET 3 OF 8)

PLAN No: 110350-CC-203 I
FILE No: 110350-CC-203
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:52:11 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-203.dwg



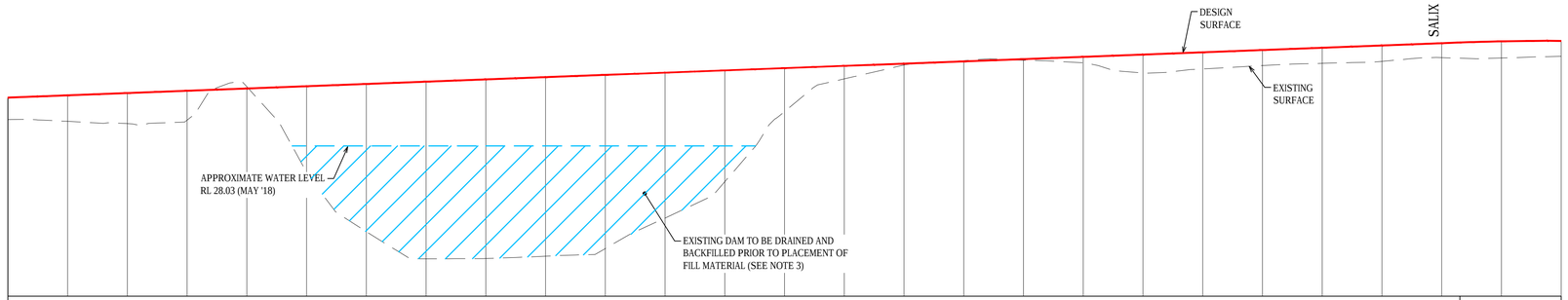
PLAN

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS, REFER TO 110350-CC-003
2. EXISTING LINEMARKING AND SIGN POSTING IS TO BE RETAINED WHERE NOT DIRECTLY IMPACTED BY THE ROADWORKS
3. FOR DETAILS REGARDING DAM BACKFILLING BETWEEN CH300-CH390, CH467-CH545 AND CH777-CH824, REFER TO THE GEOTECHNICAL REPORT REGARDING ELARA STAGE 42 REFERENCE 14286/2-AA ON 21 AUGUST 2018
4. LINEMARKING INCLUDING REFLECTORS WITHIN EXISTING SECTIONS OF PAVEMENT ON APPROACH TO RICHMOND ROAD INTERSECTION IS TO BE ASSESSED AND REAPPLIED IF DEEMED NECESSARY OR AS DIRECTED BY THE PROJECT ENGINEER

LEGEND

- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING TREES
- TREES TO BE REMOVED
- DAM AREA TO BE BACKFILLED
- EXISTING CONCRETE KERB TO BE REMOVED



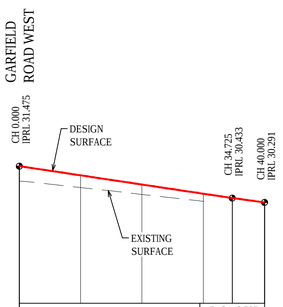
R.L. 23.0

VERTICAL GEOMETRY: P=0.760% L=317.917; R=-2439.532 L=65.000

HORIZONTAL GEOMETRY: D=48.731; R=475.000 L=212.444; D=591.455

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
420.000	29.651	28.912
430.000	29.727	28.855
440.000	29.803	28.779
450.000	29.879	28.896
460.000	29.955	30.017
470.000	30.031	27.156
480.000	30.107	25.157
490.000	30.183	24.248
500.000	30.259	24.260
510.000	30.335	24.337
520.000	30.411	24.593
530.000	30.487	25.615
540.000	30.563	26.833
550.000	30.639	29.183
560.000	30.715	30.280
570.000	30.791	30.742
580.000	30.867	30.891
590.000	30.943	30.905
600.000	31.019	30.817
610.000	31.095	30.477
620.000	31.171	30.613
630.000	31.247	30.726
640.000	31.323	30.798
650.000	31.399	30.864
660.000	31.475	30.989
670.000	31.541	30.978
680.000	31.568	31.034

LONGITUDINAL SECTION - GARFIELD ROAD WEST EXTENSION - MC10



R.L. 27.0

VERTICAL GEOMETRY: P=-3.001% L=29.450; R=3416.707 L=10.550

HORIZONTAL GEOMETRY: D=11.273; R=50.000 L=19.869; D=8.858

CHAINAGE	DESIGN LEVELS	EXISTING LEVELS
0.000	31.475	30.988
10.000	31.175	30.778
20.000	30.875	30.552
30.000	30.575	30.327
40.000	30.291	

LONGITUDINAL SECTION
SALIX CRESCENT (1) - MC50

V 1:100 (AT A1) — METRES

1:500 (AT A1)
1:1000 (AT A3) — METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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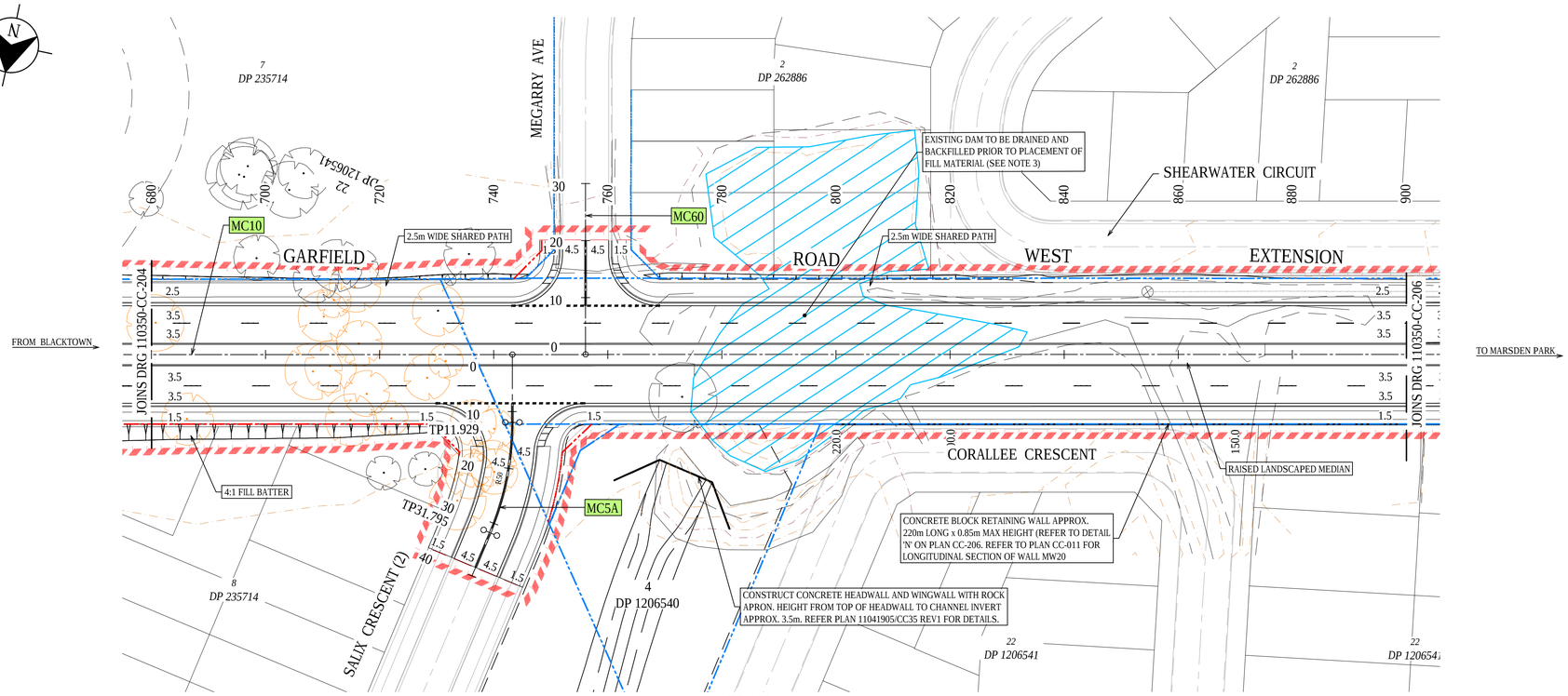
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PLAN AND LONGITUDINAL SECTION (SHEET 4 OF 8)

PLAN No: 110350-CC-204 I
FILE No: 110350-CC-204
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:52:25 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-204.dwg



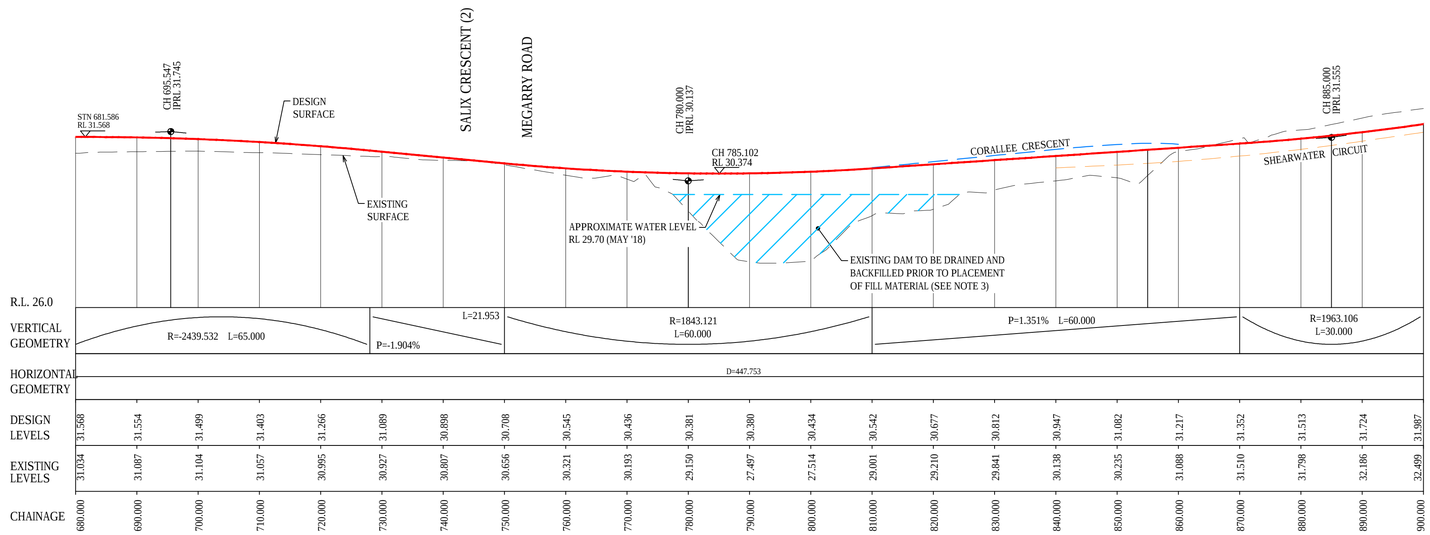
PLAN

NOTES

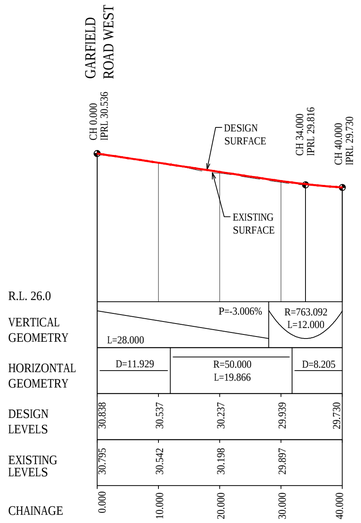
1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS, REFER TO 110350-CC-003
2. EXISTING LINEMARKING AND SIGN POSTING IS TO BE RETAINED WHERE NOT DIRECTLY IMPACTED BY THE ROADWORKS
3. FOR DETAILS REGARDING DAM BACKFILLING BETWEEN CH300-CH390, CH467-CH545 AND CH777-CH824, REFER TO THE GEOTECHNICAL REPORT REGARDING ELARA STAGE 42 REFERENCE 14286/2-AA ON 21 AUGUST 2018
4. LINEMARKING INCLUDING REFLECTORS WITHIN EXISTING SECTIONS OF PAVEMENT ON APPROACH TO RICHMOND ROAD INTERSECTION IS TO BE ASSESSED AND REAPPLIED IF DEEMED NECESSARY OR AS DIRECTED BY THE PROJECT ENGINEER

LEGEND

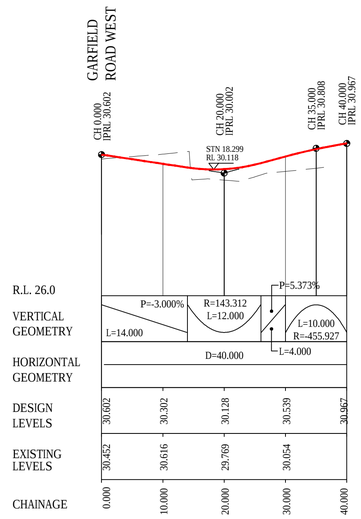
- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING TREES
- TREES TO BE REMOVED
- DAM AREA TO BE BACKFILLED
- EXISTING CONCRETE KERB TO BE REMOVED



LONGITUDINAL SECTION - GARFIELD ROAD WEST EXTENSION - MC10



LONGITUDINAL SECTION
SALIX CRESCENT (2)- MC5A



LONGITUDINAL SECTION
MEGARRY AVE - MC60

V 1:100 (AT A1) — METRES

1:500 (AT A1)
1:1000 (AT A3) — METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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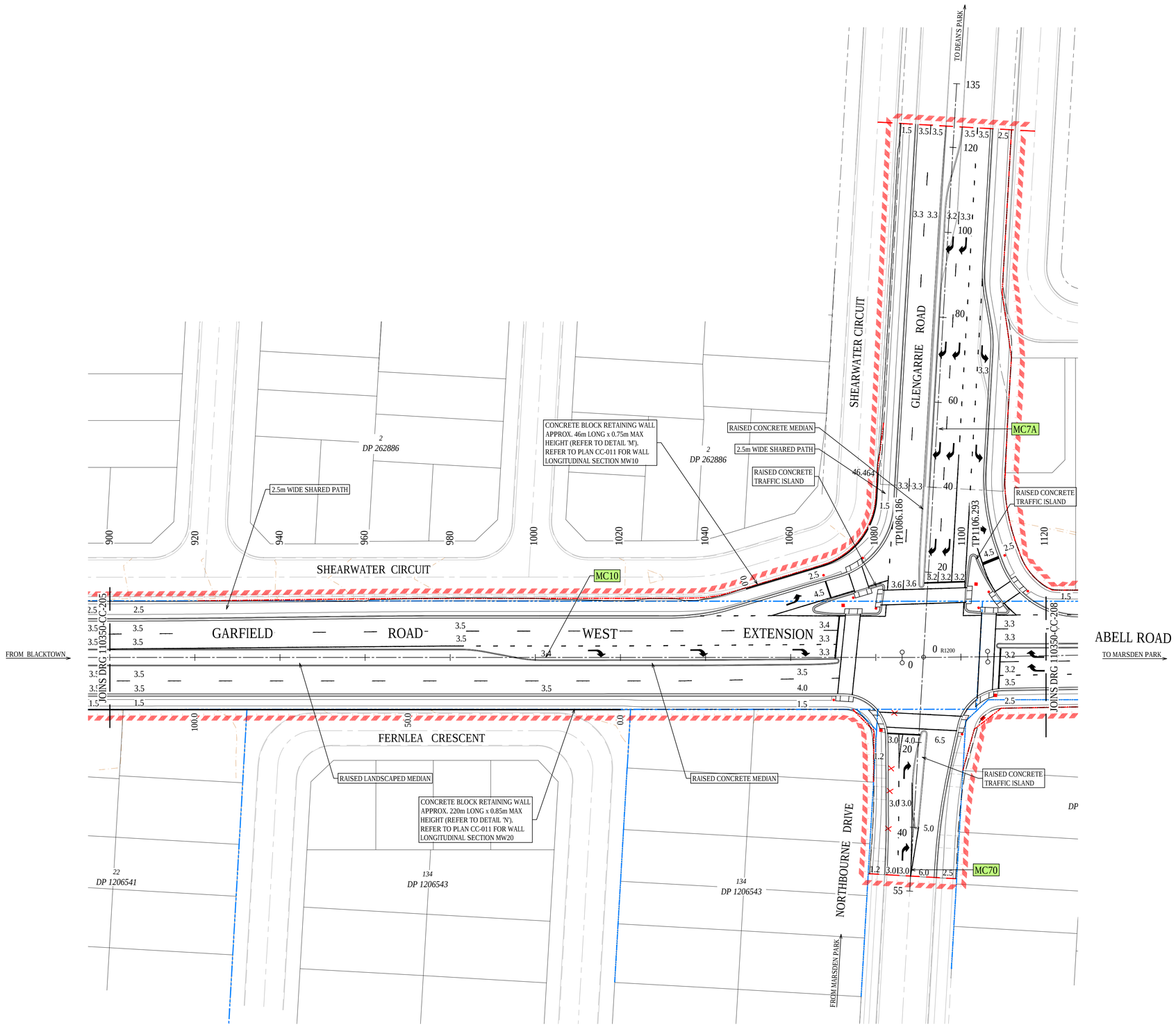
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PLAN AND LONGITUDINAL SECTION (SHEET 5 OF 8)

PLAN No: 110350-CC-205 I
FILE No: 110350-CC-205
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:52:38 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTIC\C110350-CC-205.dwg



PLAN

V 1:100 (AT A1) — METRES

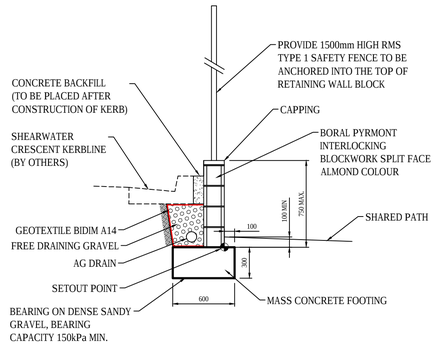
1:500 (AT A1)
1:1000 (AT A3) — METRES

NOTES

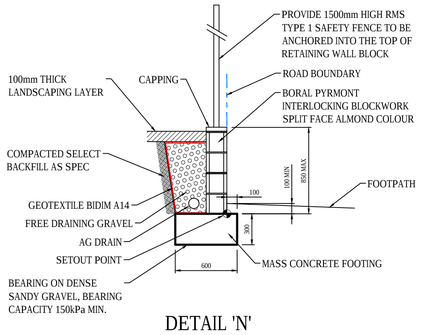
1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS, REFER TO 110350-CC-003
2. EXISTING LINEMARKING AND SIGN POSTING IS TO BE RETAINED WHERE NOT DIRECTLY IMPACTED BY THE ROADWORKS
3. FOR DETAILS REGARDING DAM BACKFILLING BETWEEN CH300-CH390, CH467-CH545 AND CH777-CH824, REFER TO THE GEOTECHNICAL REPORT REGARDING ELARA STAGE 42 REFERENCE 14286/2-AA ON 21 AUGUST 2018
4. LINEMARKING INCLUDING REFLECTORS WITHIN EXISTING SECTIONS OF PAVEMENT ON APPROACH TO RICHMOND ROAD INTERSECTION IS TO BE ASSESSED AND REAPPLIED IF DEEMED NECESSARY OR AS DIRECTED BY THE PROJECT ENGINEER
5. FOR LONGITUDINAL SECTIONS OF MC10, MC70 AND MC7A REFER TO DRAWING 110350-CC-207

LEGEND

- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING TREES
- TREES TO BE REMOVED
- DAM AREA TO BE BACKFILLED
- EXISTING CONCRETE KERB TO BE REMOVED
- TRAFFIC CONTROL SIGNAL POST
- TRAFFIC CONTROL SIGNAL MAST ARM POST



DETAIL 'M'
BORAL 'PYRMONT' RETAINING WALL
HEIGHT UP TO 750mm
N.T.S.



DETAIL 'N'
BORAL 'PYRMONT' RETAINING WALL
HEIGHT UP TO 850mm
N.T.S.

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
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ORIGIN: M.G.A

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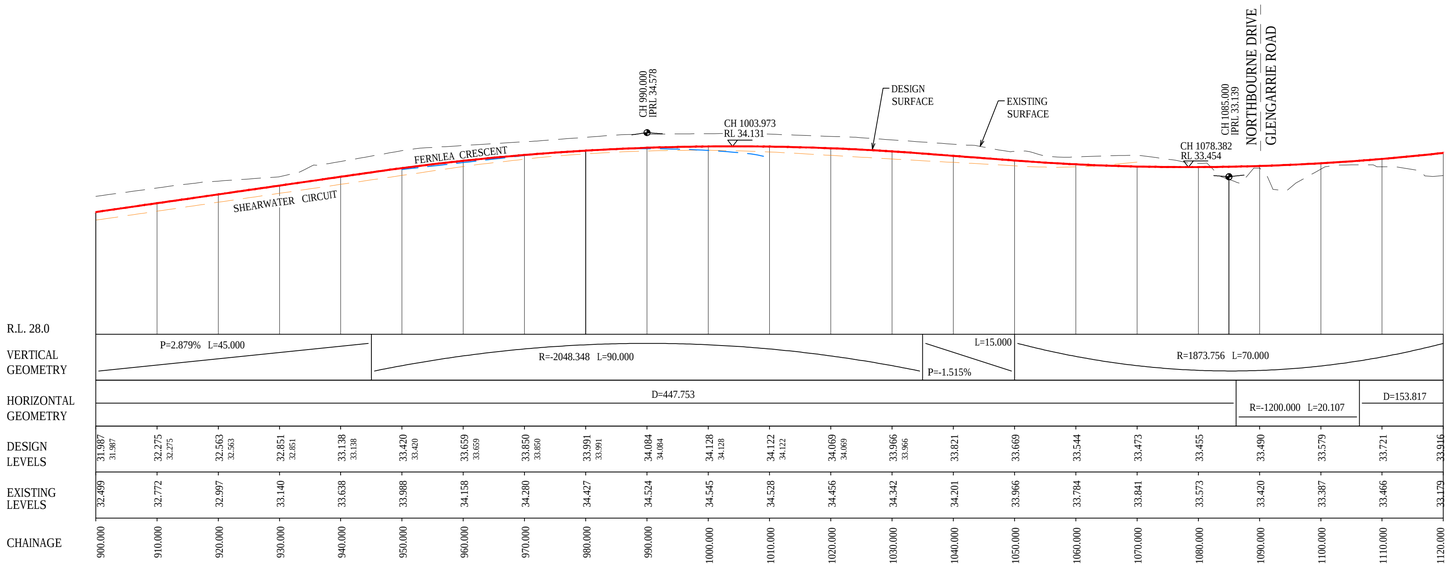
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

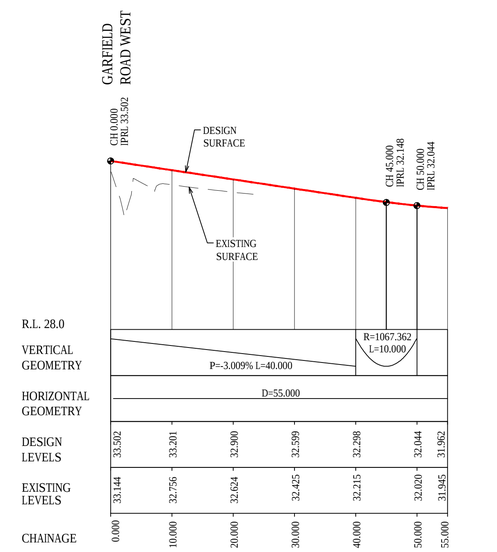
PLAN AND LONGITUDINAL SECTION (SHEET 6 OF 8)

PLAN No: 110350-CC-206 I
FILE No: 110350-CC-206
SHEET SIZE: A1 ORIGINAL

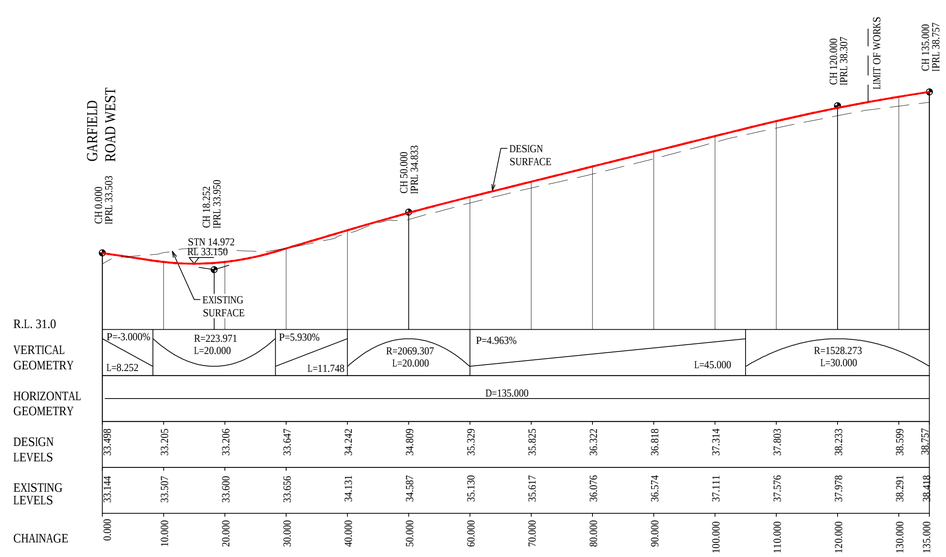
Plotted: 15 February , 2019 9:52:54 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-206.dwg



LONGITUDINAL SECTION - GARFIELD ROAD WEST EXTENSION - MC10

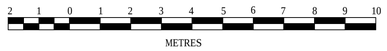


LONGITUDINAL SECTION - NORTHBOURNE DRIVE - MC70

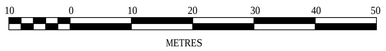


LONGITUDINAL SECTION - GLENGARRIE ROAD - MC7A

V 1:100 (AT A1)



1:500 (AT A1)
1:1000 (AT A3)



I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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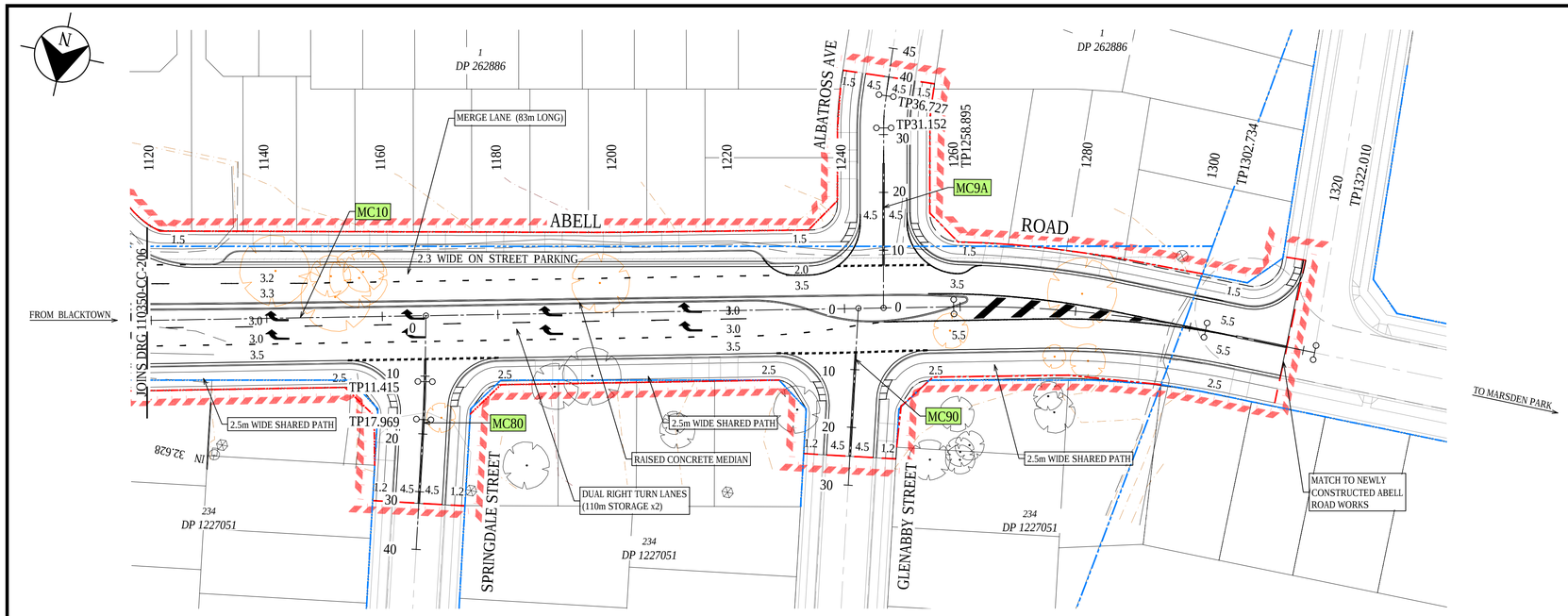
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PLAN AND LONGITUDINAL SECTION (SHEET 7 OF 8)

PLAN No: 110350-CC-207 I
FILE No: 110350-CC-207
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:53:01 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-207.dwg



PLAN

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS, REFER TO 110350-CC-003
2. EXISTING LINEMARKING AND SIGN POSTING IS TO BE RETAINED WHERE NOT DIRECTLY IMPACTED BY THE ROADWORKS
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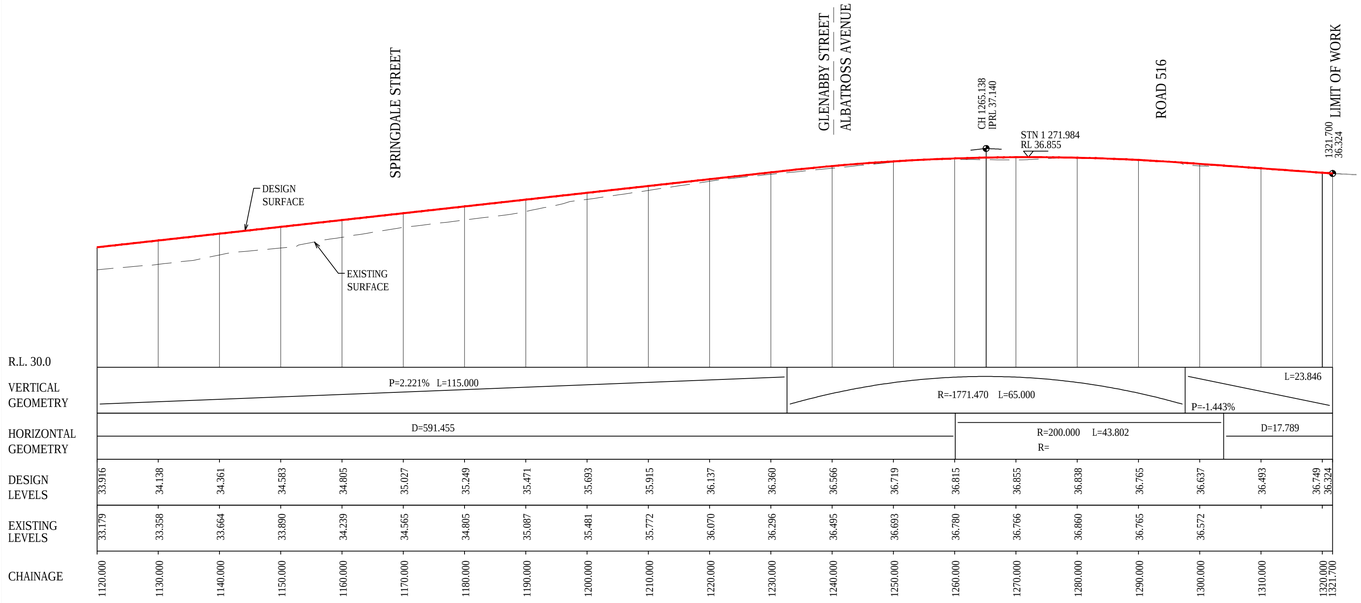
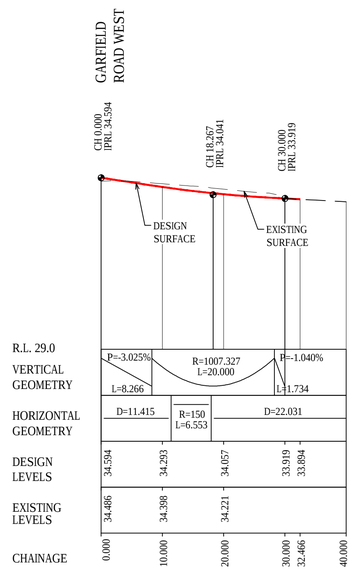
LEGEND

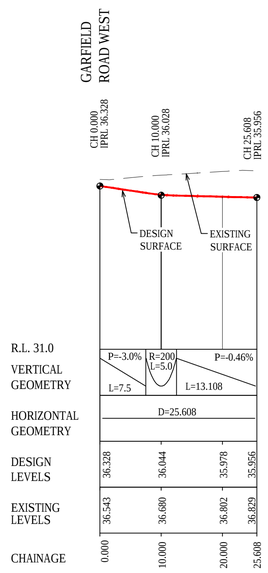
- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- EXISTING TREES
- TREES TO BE REMOVED
- DAM AREA TO BE BACKFILLED
- EXISTING CONCRETE KERB TO BE REMOVED



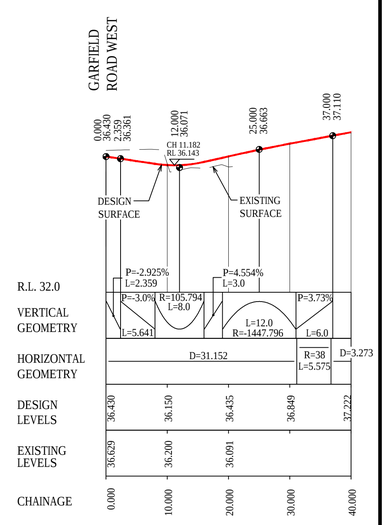
LONGITUDINAL SECTION - ABELL ROAD - MC10



LONGITUDINAL SECTION
SPRINGDALE STREET - MC80



LONGITUDINAL SECTION
GLENABBY ROAD - MC90



LONGITUDINAL SECTION
ALBATROSS AVE - MC9A

V 1:100 (AT A1) — METRES

1:500 (AT A1)
1:1000 (AT A3) — METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
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ORIGIN: M.G.A

CLIENT: Stockland

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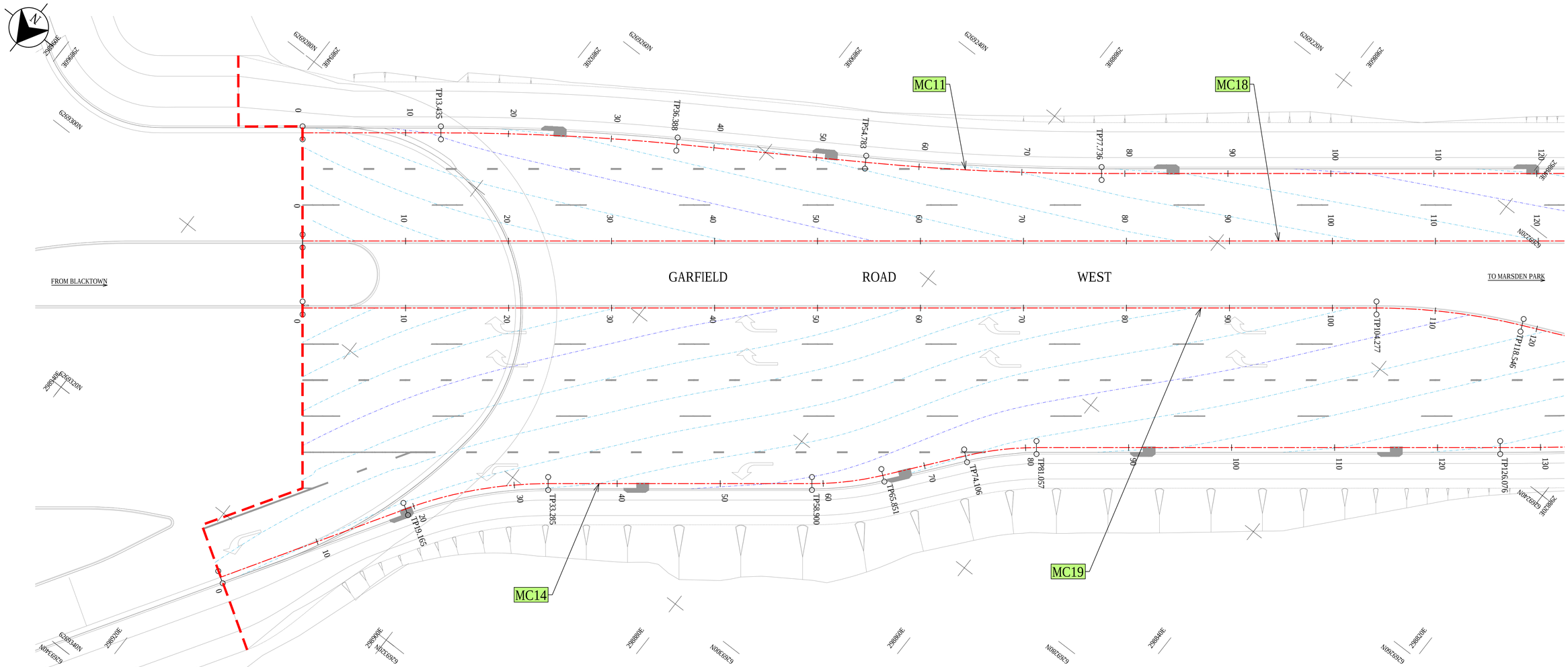
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PLAN AND LONGITUDINAL SECTION (SHEET 8 OF 8)

PLAN No: 110350-CC-208 I
FILE No: 110350-CC-208
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:53:15 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-208.dwg



LIP LINE CONTROL - MC11					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298936.644	6269286.126	232° 7' 13.4"	
T.P.	13.435	298926.039	6269277.876	232° 7' 13.4"	
CENTRE		298778.678	6269467.309		240
T.P.	36.388	298907.276	6269264.670	237° 35' 59.9"	
T.P.	54.783	298891.745	6269254.814	237° 35' 59.9"	
CENTRE		299020.344	6269052.175		-240
T.P.	77.736	298872.983	6269241.608	232° 7' 13.3'	
T.P.	165.258	298803.901	6269187.869	232° 7' 13.3"	
CENTRE		298809.397	6269180.805		-8.95
T.P.	179.256	298802.296	6269175.357	142° 30' 28.6"	
END	181.850	298803.875	6269173.299	142° 30' 28.6"	

LIP LINE CONTROL - MC14					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298916.446	6269325.073	211° 53' 34.6"	
T.P.	19.165	298906.320	6269308.802	211° 53' 34.6"	
CENTRE		298872.359	6269329.935		40
T.P.	33.285	298896.920	6269298.364	232° 7' 7.9"	
T.P.	58.900	298876.702	6269282.635	232° 7' 7.9"	
CENTRE		298895.123	6269258.957		-30
T.P.	65.851	298871.757	6269277.772	218° 50' 37.4"	
T.P.	74.106	298866.580	6269271.343	218° 50' 37.4"	
CENTRE		298843.214	6269290.159		30
T.P.	81.057	298861.634	6269266.480	232° 7' 13.3"	
T.P.	126.076	298826.101	6269238.839	232° 7' 13.3"	
CENTRE		299071.703	6268923.118		-400
C.T.P.	173.662	298790.365	6269207.458	225° 18' 14.9"	
CENTRE		298784.071	6269213.820		8.95
END	188.841	298776.972	6269208.369	322° 28' 37.7"	

MEDIAN CONTROL - MC18					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298930.196	6269294.413	232° 7' 13.3"	
T.P.	243.494	298738.006	6269144.907	232° 7' 13.3"	
CENTRE		298771.777	6269101.495		-55
C.T.P.	263.669	298724.683	6269129.907	211° 6' 8.3"	
CENTRE		298724.255	6269130.165		0.5
C.T.P.	264.721	298723.815	6269129.927	331° 34' 20.5"	
CENTRE		298698.136	6269116.026		-29.2
C.T.P.	272.365	298719.343	6269136.099	316° 34' 21.8"	
CENTRE		298720.214	6269136.924		1.2
END	274.684	298719.751	6269138.031	67° 18' 45.1"	

MEDIAN CONTROL - MC19					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298926.205	6269299.544	232° 7' 13.4"	
T.P.	104.277	298843.899	6269235.517	232° 7' 13.4"	
CENTRE		298807.059	6269282.875		60
T.P.	118.546	298831.706	6269228.171	245° 44' 45.9"	
T.P.	129.355	298821.851	6269223.731	245° 44' 45.9"	
CENTRE		298846.498	6269169.027		-60
C.T.P.	148.445	298805.975	6269213.275	227° 30' 59.3"	
CENTRE		299071.770	6268923.043		-393.55
T.P.	164.032	298794.692	6269202.523	225° 14' 50.0"	
T.P.	193.573	298773.713	6269181.725	225° 14' 50.0"	
CENTRE		298452.279	6269505.945		456.55
C.T.P.	248.746	298732.283	6269145.340	232° 10' 16.5"	
CENTRE		298698.551	6269188.781		55
END	263.295	298719.751	6269138.031	247° 19' 40.6"	

LEGEND

- LIMIT OF ROADWORKS
- 10 DESIGN CONTROL LINE
- 28.5 SURFACE CONTOUR (MINOR)
- SURFACE CONTOUR (MINOR)

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
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CLIENT: Stockland

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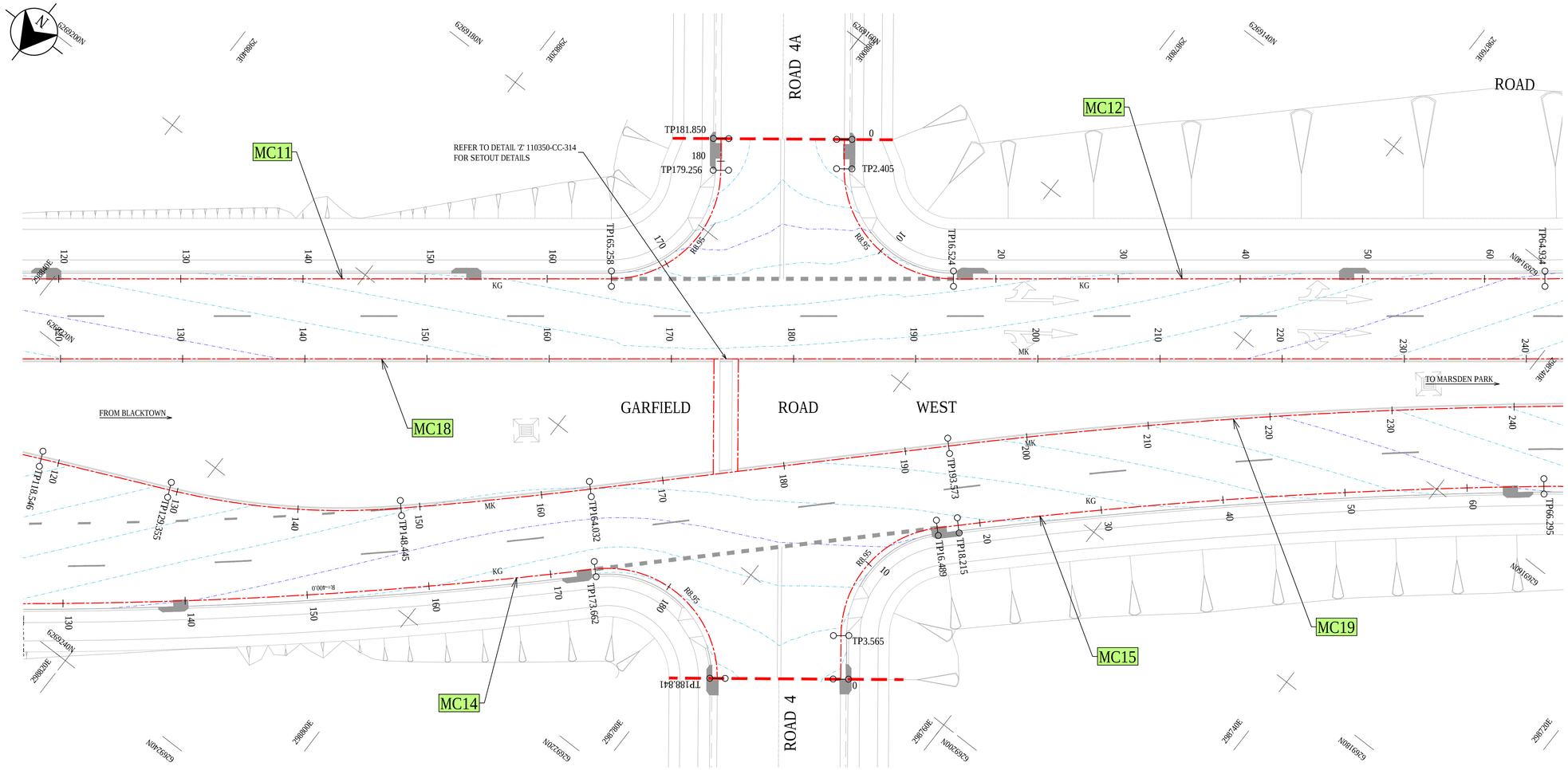
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 1 OF 14

PLAN No: 110350-CC-301 D
FILE No: 110350-CC-301
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:53:27 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-301.dwg

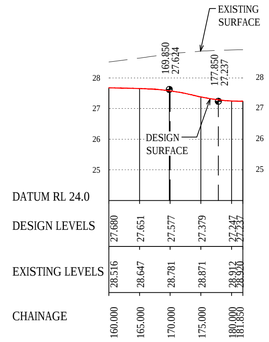


NOTES

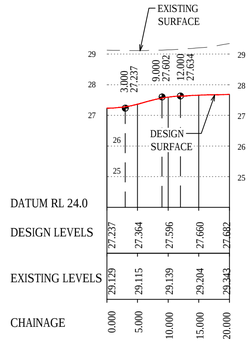
1. REFER TO 110350-CC-301 FOR SETTING OUT DETAILS FOR MC11, MC14, MC18 AND MC19

LEGEND

- LIMIT OF ROADWORKS
- DESIGN CONTROL LINE
- SURFACE CONTOUR (MINOR)
- SURFACE CONTOUR (MINOR)



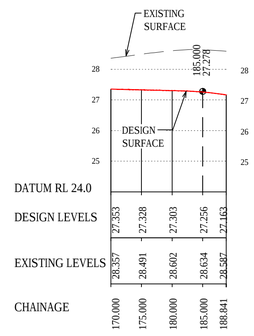
LIP LINE PROFILE MC11



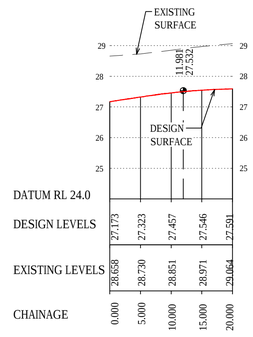
LIP LINE PROFILE MC12

LIP LINE CONTROL - MC12					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298795.861	6269167.151	322° 30' 34.3"	
T.P.	2.405	298794.397	6269169.059	322° 30' 34.3"	
CENTRE		298787.296	6269163.612		-8.95
T.P.	16.524	298781.801	6269170.676	232° 7' 13.3"	
T.P.	64.934	298743.591	6269140.953	232° 7' 13.3"	
CENTRE		298772.142	6269104.250		-46.5
END	137.659	298735.246	6269075.949	142° 30' 35.5"	

LIP LINE CONTROL - MC15					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298768.957	6269202.223	142° 30' 31.8"	
T.P.	3.565	298771.127	6269199.395	142° 30' 31.8"	
CENTRE		298764.026	6269193.947		8.95
T.P.	16.489	298770.327	6269187.592	225° 14' 50.1"	
T.P.	18.215	298769.101	6269186.376	225° 14' 50.1'	
CENTRE		298452.279	6269505.945		450
C.T.P.	66.295	298733.215	6269154.412	231° 22' 8.5"	
CENTRE		298705.122	6269189.565		45
T.P.	137.877	298669.416	6269162.177	322° 30' 34.8"	
END	142.323	298666.710	6269165.705	322° 30' 34.8"	



LIP LINE PROFILE MC14



LIP LINE PROFILE MC15

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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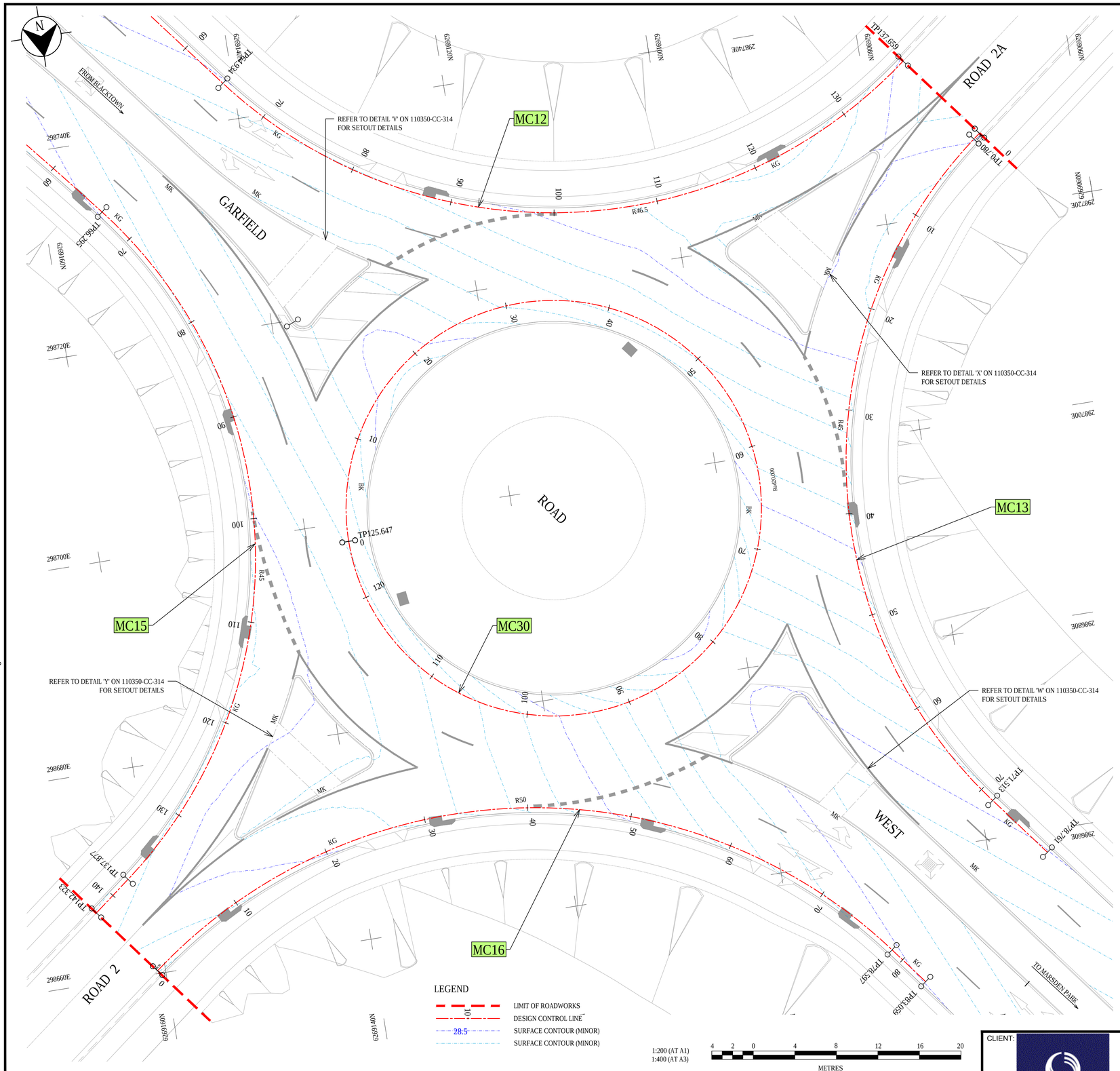
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 2 OF 14

PLAN No: 110350-CC-302 D
FILE No: 110350-CC-302
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:53:43 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-302.dwg



NOTES

1. REFER TO 110350-CC-302 FOR SETTING OUT DETAILS OF MC12 AND MC15
2. REFER TO 110350-CC-305 FOR KERB RETURN PROFILES.

ROUNDABOUT CENTRAL ISLAND CONTROL - MC30					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298698.143	6269136.020	89° 59' 59.5"	
CENTRE		298698.143	6269116.020		20
END	125.647	298698.124	6269136.020	89° 56' 44.3"	

LIP LINE CONTROL - MC13					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298727.232	6269069.801	322° 34' 18.3"	
T.P.	0.780	298726.758	6269070.421	322° 34' 18.3"	
CENTRE		298691.022	6269043.071		-45
T.P.	71.478	298663.663	6269078.799	232° 33' 22.4"	
END	78.761	298657.881	6269074.371	232° 33' 22.4"	

LIP LINE CONTROL - MC16					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298660.283	6269160.775	142° 30' 30.0"	
CENTRE		298620.611	6269130.342		50
T.P.	78.597	298650.998	6269090.635	232° 34' 26.8"	
END	83.059	298647.455	6269087.924	232° 34' 26.8"	

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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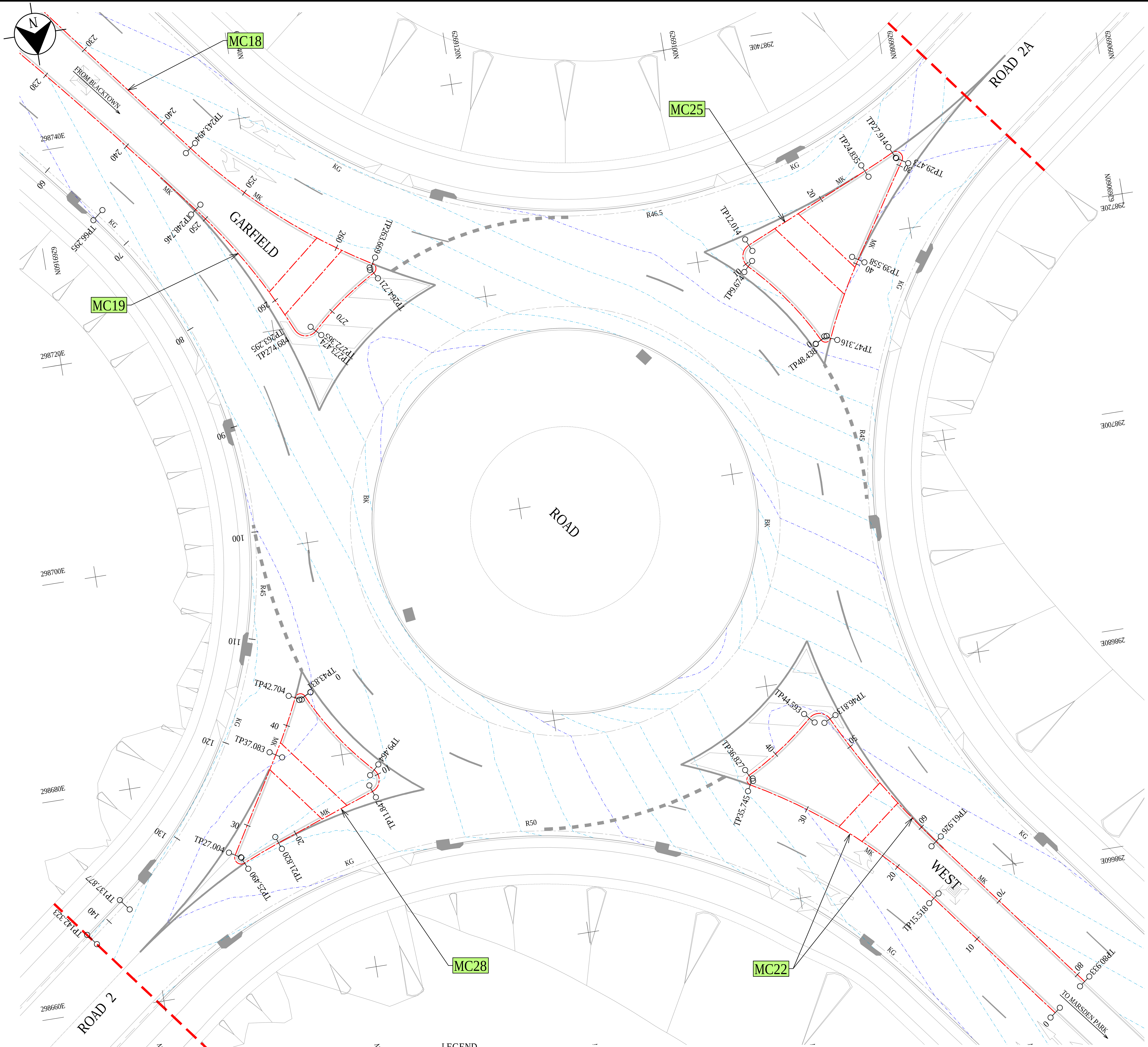
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 3 OF 14

PLAN No: 110350-CC-303 D
FILE No: 110350-CC-303
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:53:57 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-303.dwg



NOTES

1. REFER TO 110350-CC-301 FOR SETTING OUT DETAILS OF MC18 AND MC19
2. REFER TO 110350-CC-305 FOR KERB RETURN PROFILES
3. REFER TO 110350-CC-314 FOR SETTING OUT OF PEDESTRIAN CROSSING REFUGES

MEDIAN CONTROL - MC22

	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298645.695	6269078.313	52° 30' 43.1"	
T.P.	15.518	298658.008	6269087.757	52° 30' 43.1"	
CENTRE		298627.578	6269127.431		-50
T.P.	35.745	298671.167	6269102.936	29° 20' 2.9"	
CENTRE		298671.603	6269102.691		0.5
T.P.	36.827	298672.050	6269102.916	153° 19' 23.9"	
CENTRE		298698.142	6269116.025		-29.2
T.P.	44.593	298676.413	6269096.519	138° 5' 4.2"	
CENTRE		298675.520	6269095.717		1.2
T.P.	46.813	298676.045	6269094.638	244° 3' 26.7"	
CENTRE		298708.855	6269027.195		-75
T.P.	61.926	298663.211	6269086.706	232° 30' 43.1"	
END	80.933	298648.129	6269075.139	232° 30' 43.1"	

ISLAND CONTROL - MC25

	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298711.023	6269089.822	63° 51' 5.2"	
CENTRE		298698.155	6269116.033		-29.2
C.T.P.	9.674	298718.849	6269095.433	44° 52' 10.0"	
CENTRE		298719.700	6269094.586		1.2
T.P.	12.014	298720.801	6269095.063	156° 35' 3.3"	
T.P.	24.835	298725.896	6269083.297	156° 35' 3.3"	
CENTRE		298790.131	6269111.115		-70
C.T.P.	27.914	298727.181	6269080.501	154° 3' 53.0"	
CENTRE		298726.642	6269080.238		0.6
T.P.	29.473	298726.315	6269079.735	302° 56' 26.5"	
T.P.	39.558	298717.851	6269085.219	302° 56' 26.5"	
CENTRE		298690.663	6269043.257		-50
C.T.P.	47.316	298711.040	6269088.916	294° 3' 1.2"	
CENTRE		298711.244	6269089.373		0.5
END	48.438	298711.013	6269089.817	62° 35' 27.4"	

ISLAND CONTROL - MC28

	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298685.930	6269142.541	245° 13' 44.4"	
CENTRE		298698.164	6269116.028		-29.2
C.T.P.	9.464	298678.123	6269137.265	226° 39' 31.8"	
CENTRE		298677.300	6269138.137		1.2
T.P.	11.847	298676.169	6269137.735	340° 25' 5.1"	
T.P.	21.820	298672.826	6269147.132	340° 25' 5.1"	
CENTRE		298621.007	6269128.699		-55
C.T.P.	25.490	298671.482	6269150.546	336° 35' 40.8"	
CENTRE		298672.032	6269150.785		0.6
T.P.	27.004	298672.343	6269151.298	121° 9' 58.5"	
T.P.	37.083	298680.967	6269146.082	121° 9' 58.5"	
CENTRE		298706.843	6269188.866		-50
C.T.P.	42.704	298685.929	6269143.450	114° 43' 31.6"	
CENTRE		298685.720	6269142.995		0.5
END	43.831	298685.940	6269142.546	243° 58' 6.8"	

LEGEND

- LIMIT OF ROADWORKS
- DESIGN CONTROL LINE
- 28.5 SURFACE CONTOUR (MINOR)
- SURFACE CONTOUR (MINOR)

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

FOR CONSTRUCTION APPROVAL

	AMENDMENT	DES	DRN	CKD	APR	DATE
D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

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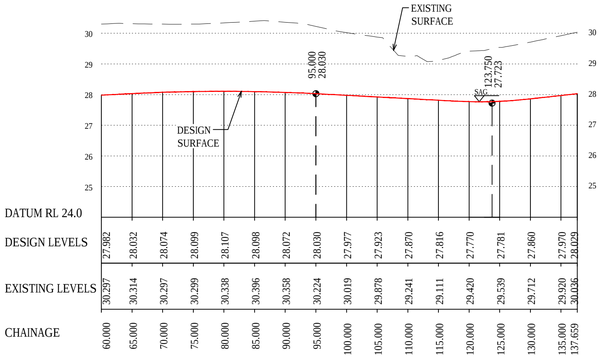
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

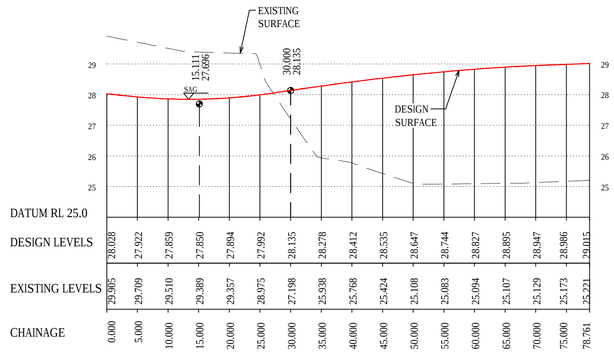
ROAD SETTING OUT DETAILS - SHEET 4 OF 14

PLAN No: 110350-CC-304 D
FILE No: 110350-CC-304
SHEET SIZE: A1 ORIGINAL

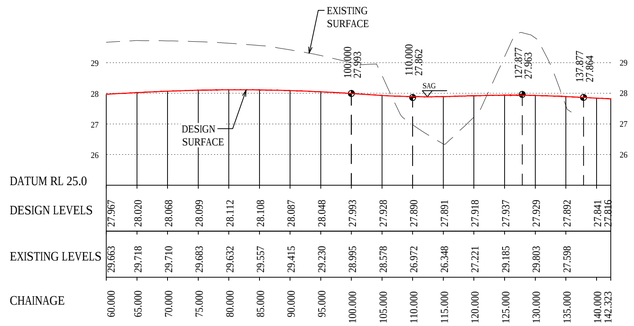
Plotted: 15 February , 2019 9:54:09 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-304.dwg



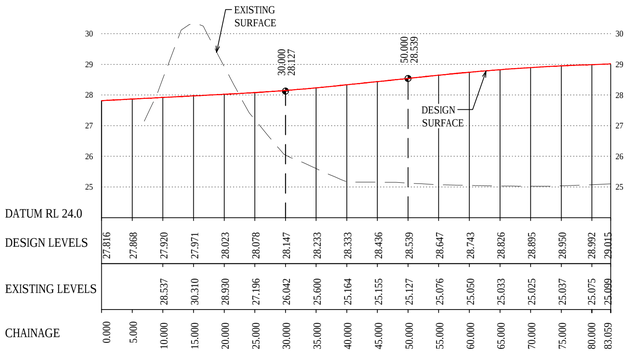
LIP LINE PROFILE MC12



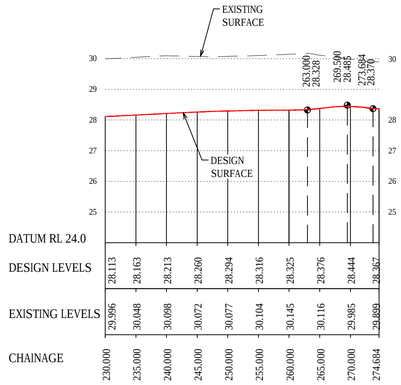
LIP LINE PROFILE MC13



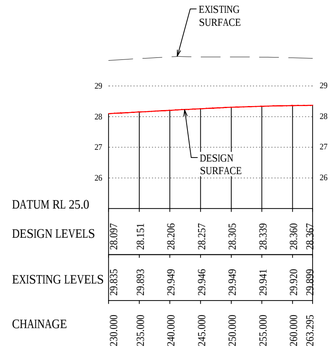
LIP LINE PROFILE MC15



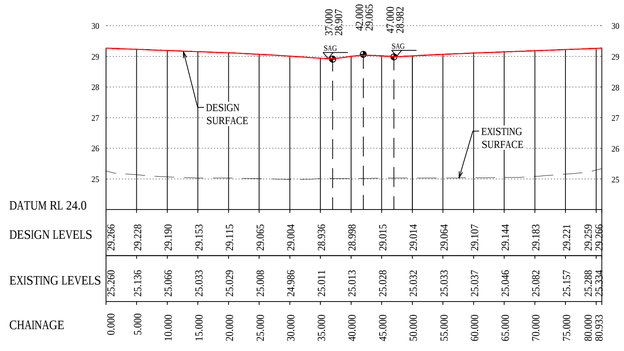
LIP LINE PROFILE MC16



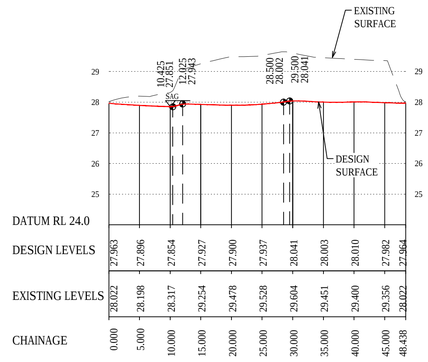
CENTRE MEDIAN PROFILE MC18



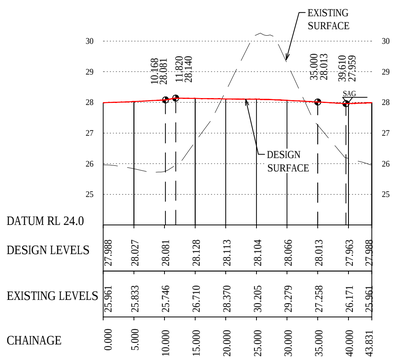
MEDIAN PROFILE MC19



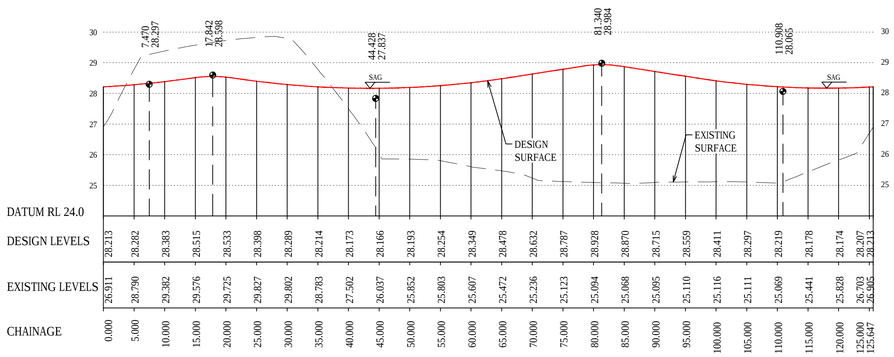
MEDIAN PROFILE MC22



ISLAND PROFILE MC25



ISLAND PROFILE MC28



ROUNDABOUT ISLAND PROFILE MC30

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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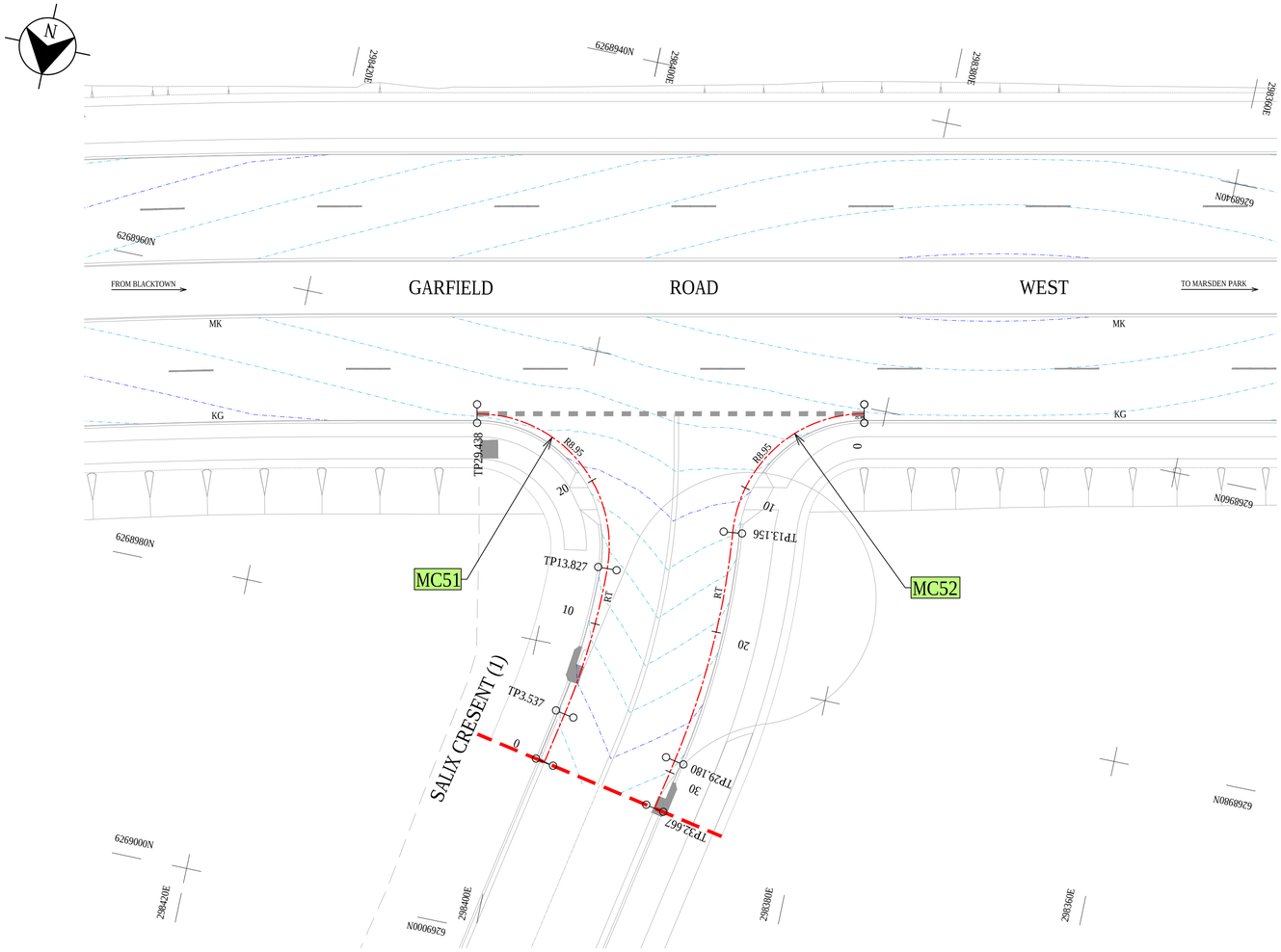
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 5 OF 14

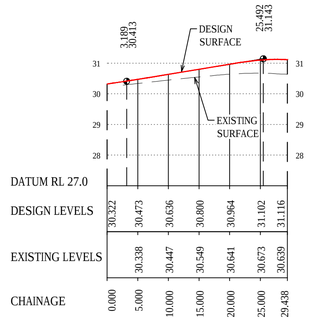
PLAN No: 110350-CC-305 D
FILE No: 110350-CC-305
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:54:22 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-305.dwg

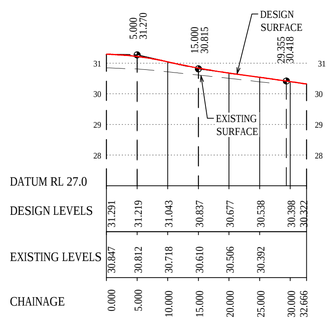


LEGEND

- LIMIT OF ROADWORKS
- DESIGN CONTROL LINE
- SURFACE CONTOUR (MINOR) (10)
- SURFACE CONTOUR (MINOR) (28.5)



LIP LINE PROFILE MC51



LIP LINE PROFILE MC52

LIP LINE CONTROL - MC51

	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298397.758	6268987.976	190° 54' 31.3"	
T.P.	3.537	298397.088	6268984.503	190° 54' 31.3"	
CENTRE		298442.208	6268975.807		-45.95
C.T.P.	13.827	298396.284	6268974.266	178° 4' 42.8"	
CENTRE		298405.229	6268974.566		-8.95
END	29.438	298407.068	6268965.808	78° 8' 15.0"	

LIP LINE CONTROL - MC52

	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298381.411	6268960.418	78° 8' 15.0"	
CENTRE		298379.571	6268969.177		-8.950
C.T.P.	13.156	298388.471	6268970.126	353° 55' 0.6"	
CENTRE		298442.217	6268975.853		54.050
T.P.	29.180	298389.142	6268986.077	10° 54' 10.9"	
END	32.667	298389.802	6268989.501	10° 54' 10.9"	

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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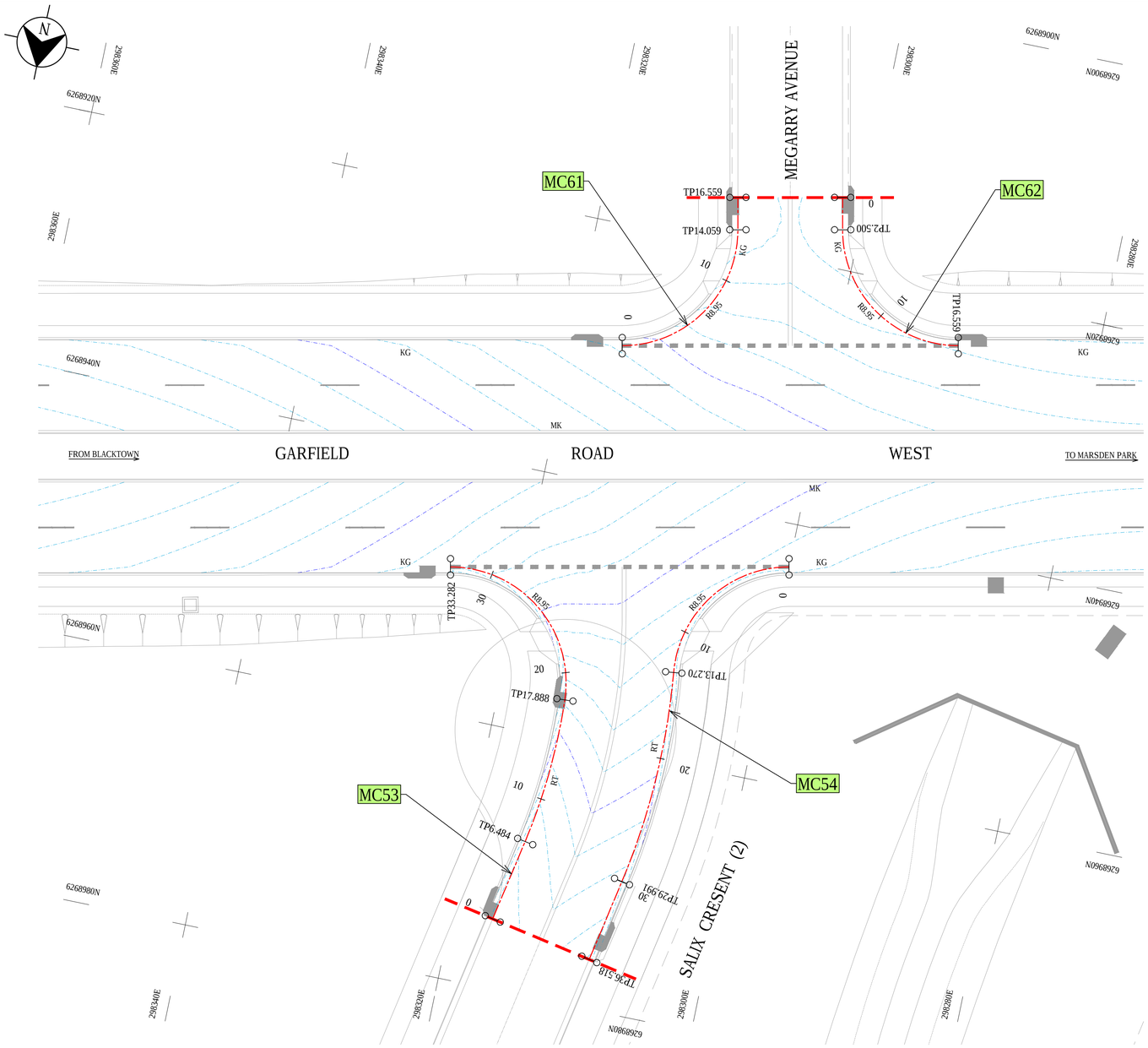
FOR CONSTRUCTION APPROVAL

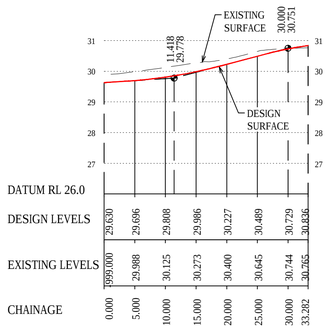
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 6 OF 14

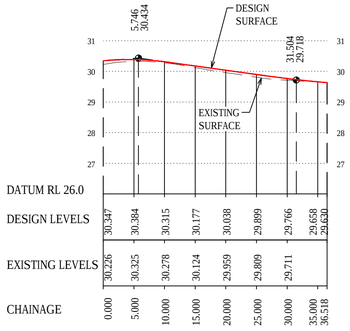
PLAN No: 110350-CC-306 D
FILE No: 110350-CC-306
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February 2019 9:54:32 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-306.dwg

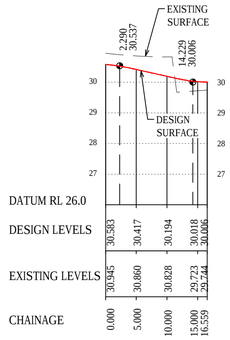




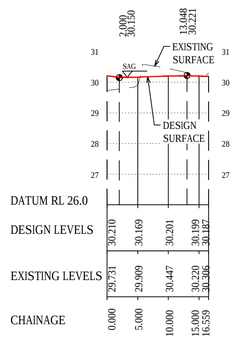
KERB RETURN MC53



KERB RETURN MC54



KERB RETURN MC61



KERB RETURN MC62

CONTROL - MC53					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298316.826	6268974.658	190° 54' 31.4"	
T.P.	6.484	298315.59897 6	268968.290	190° 54' 31.4"	
CENTRE		298360.719	6268959.595		-45.950
C.T.P.	17.888	298314.845	6268956.941	176° 41' 23.4"	
CENTRE		298323.780	6268957.458		-8.950
END	33.282	298325.620	6268948.699	78° 8' 15.0"	

CONTROL - MC54					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298299.996	6268943.317	78° 8' 14.9"	
CENTRE		298298.156	6268952.076		-8.950
C.T.P.	13.270	298307.043	6268953.138	353° 11' 1.8"	
CENTRE		298360.711	6268959.553		54.050
T.P.	29.991	298307.637	6268969.782	10° 54' 31.4"	
END	36.518	298308.872	6268976.191	10° 54' 31.4"	

CONTROL - MC61					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298316.131	6268929.233	258° 8' 14.9"	
CENTRE		298317.971	6268920.474		-8.950
T.P.	14.059	298309.212	6268918.634	168° 8' 13.4"	
END	16.559	298309.726	6268916.187	168° 8' 13.4"	

CONTROL - MC62					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298301.799	6268914.523	348° 8' 13.4"	
T.P.	2.500	298301.285	6268916.969	348° 8' 13.4"	
CENTRE		298292.526	6268915.129		-8.950
END	16.559	298290.686	6268923.888	258° 8' 15.0"	

LEGEND

- LIMIT OF ROADWORKS
- DESIGN CONTROL LINE
- 28.5 SURFACE CONTOUR (MINOR)
- SURFACE CONTOUR (MINOR)

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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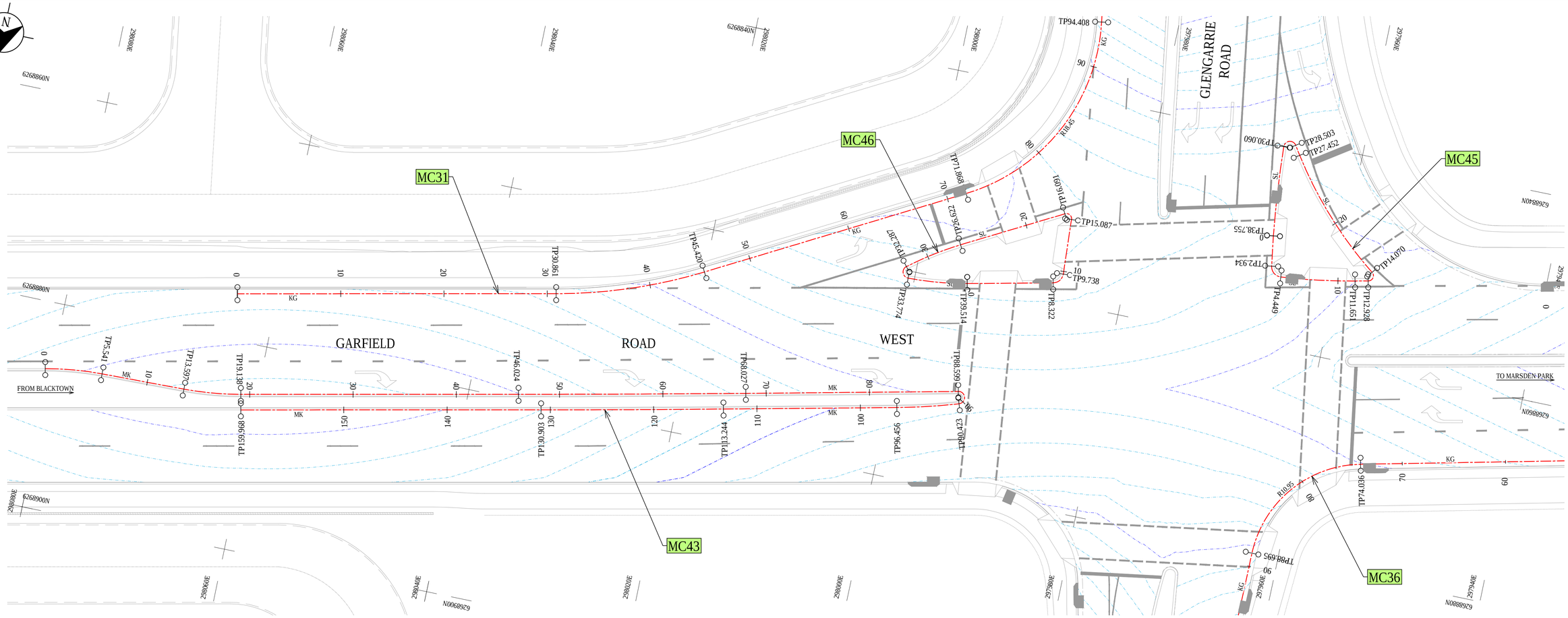
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 7 OF 14

PLAN No: 110350-CC-307 D
FILE No: 110350-CC-307
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:54:44 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-307.dwg



MEDIAN CONTROL - MC43					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298080.573	6268886.447	258° 8'14.9"	
CENTRE		298074.406	6268915.806		30
T.P.	5.541	298075.076	6268885.814	268° 43' 12.9"	
T.P.	13.597	298067.023	6268885.634	268° 43' 12.9"	
CENTRE		298067.693	6268855.641		-30
T.P.	19.138	298061.526	6268885.001	258° 8' 15.0"	
T.P.	46.024	298035.214	6268879.474	258° 8' 15.0"	
CENTRE		298549.123	6266432.865		2500
T.P.	68.027	298013.701	6268874.856	257° 37' 59.6"	
T.P.	88.599	297993.606	6268870.450	257° 37' 59.6"	
CENTRE		297993.478	6268871.036		0.6
C.T.P.	90.423	297993.291	6268871.607	71° 52' 20.5"	
CENTRE		298011.959	6268814.585		60
T.P.	96.456	297999.109	6268873.193	77° 37' 59.6"	
T.P.	113.244	298015.508	6268876.788	77° 37' 59.6"	
CENTRE		298445.237	6266916.845		2006.5
T.P.	130.903	298032.774	6268880.494	78° 8' 15.0"	
END	159.968	298061.218	6268886.469	78° 8' 15.0"	

ISLAND CONTROL - MC46					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297994.910	6268860.036	257° 46' 39.1"	
T.P.	8.322	297986.777	6268858.274	257° 46' 39.1"	
CENTRE		297986.989	6268857.297		-1
T.P.	9.738	297985.990	6268857.238	176° 37' 45.8"	
T.P.	15.087	297986.305	6268851.898	176° 37' 45.8"	
CENTRE		297986.804	6268851.928		-0.5
T.P.	16.091	297987.042	6268851.488	61° 35' 58.6"	
T.P.	26.622	297996.306	6268856.497	61° 35' 58.6"	
CENTRE		297982.037	6268882.886		-30
C.T.P.	32.287	298001.005	6268859.644	50° 46' 53.4"	
CENTRE		298000.626	6268860.109		-0.6
C.T.P.	33.774	298000.613	6268860.709	268° 45' 40.3"	
CENTRE		298001.261	6268830.716		-30
END	39.514	297994.921	6268860.038	257° 47' 54.7"	

LIP LINE CONTROL - MC31					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	298063.854	6268875.527	258° 8' 15.4"	
T.P.	30.861	298033.652	6268869.183	258° 8' 15.4"	
CENTRE		298043.930	6268820.251		-50
T.P.	45.420	298020.037	6268864.173	241° 27' 16.0"	
T.P.	71.868	297996.805	6268851.535	241° 27' 16.0"	
CENTRE		298005.621	6268835.328		-18.45
T.P.	94.408	297987.376	6268832.586	171° 27' 16.5"	
END	184.320	298000.736	6268743.672	171° 27' 16.5"	

ISLAND CONTROL - MC45					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297966.844	6268849.437	351° 27' 27.8"	
T.P.	2.934	297966.409	6268852.338	351° 27' 27.8"	
CENTRE		297965.420	6268852.190		-1
C.T.P.	4.449	297965.327	6268853.186	264° 39' 16.9"	
CENTRE		297970.916	6268793.446		-60
T.P.	11.651	297958.214	6268852.086	257° 46' 39.2"	
T.P.	12.928	297956.965	6268851.816	257° 46' 39.2"	
CENTRE		297957.071	6268851.327		-0.5
C.T.P.	14.070	297956.771	6268850.927	126° 50' 49.2"	
CENTRE		297932.784	6268818.918		40
T.P.	27.452	297965.951	6268841.277	146° 0' 53.2"	
T.P.	28.503	297966.539	6268840.406	146° 0' 53.2"	
CENTRE		297967.036	6268840.741		-0.6
C.T.P.	30.060	297967.635	6268840.770	357° 16' 44.9"	
CENTRE		297867.748	6268836.023		-100
END	38.755	297966.846	6268849.426	352° 17' 50.0"	

LIP LINE CONTROL - MC36					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297897.798	6268881.783	171° 27' 28.1"	
T.P.	15.033	297900.031	6268866.917	171° 27' 28.1"	
CENTRE		297908.882	6268868.246		-8.95
T.P.	29.760	297910.868	6268859.519	77° 10' 38.9"	
T.P.	74.036	297954.041	6268869.346	77° 10' 38.9"	
CENTRE		297951.611	6268880.023		-10.95
T.P.	88.695	297962.560	6268879.931	0° 28' 39.6"	
T.P.	98.992	297962.646	6268890.229	0° 28' 39.6"	
CENTRE		297812.651	6268891.479		-150
T.P.	122.587	297960.990	6268913.740	351° 27' 55.1"	
END	125.000	297960.632	6268916.127	351° 27' 55.1"	

NOTES

1. REFER TO 110350-CC-310 FOR SETTING OUT DETAILS OF MC36
2. REFER TO 110350-CC-309 FOR KERB RETURN PROFILES

LEGEND

- LIMIT OF ROADWORKS
- 10 DESIGN CONTROL LINE
- 28.5 SURFACE CONTOUR (MINOR)
- SURFACE CONTOUR (MINOR)

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
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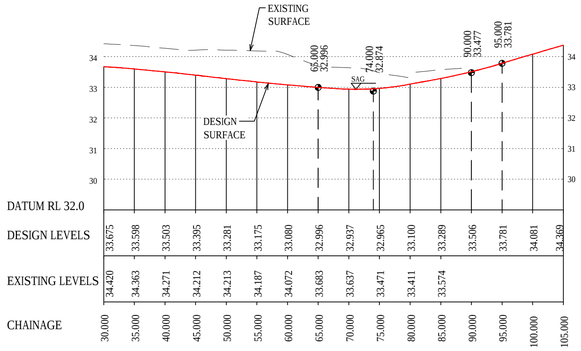
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

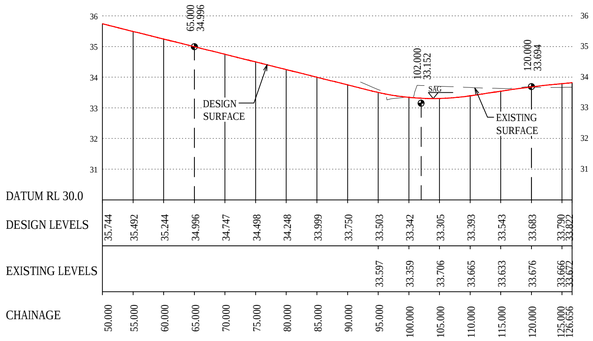
ROAD SETTING OUT DETAILS - SHEET 8 OF 14

PLAN No: 110350-CC-308 D
FILE No: 110350-CC-308
SHEET SIZE: A1 ORIGINAL

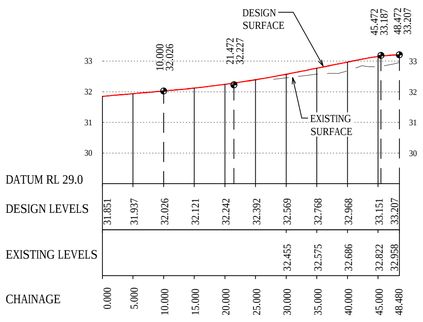
Plotted: 15 February , 2019 9:54:55 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-308.dwg



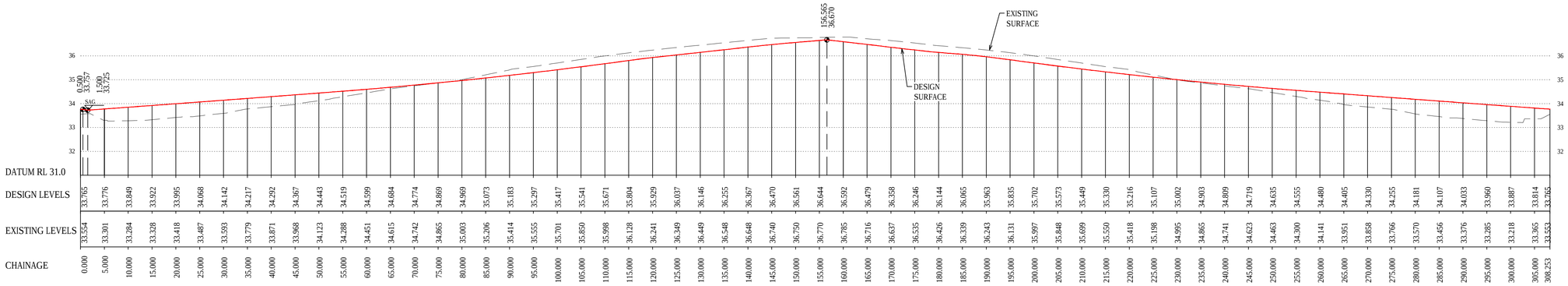
LIP LINE PROFILE MC31



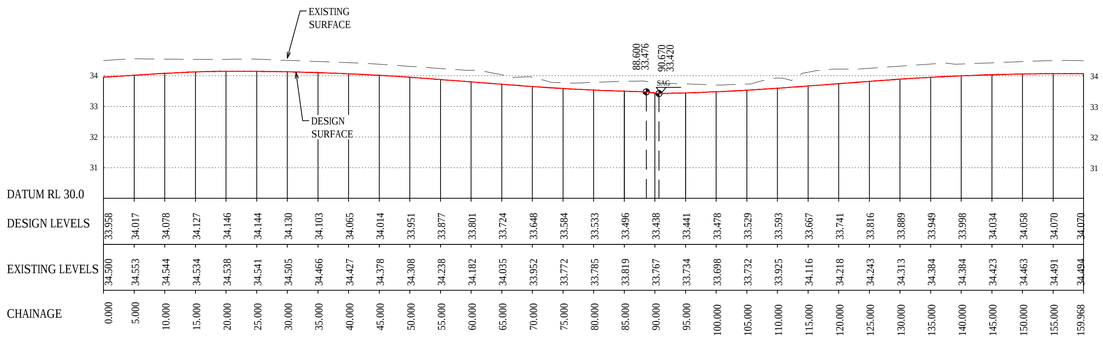
LIP LINE PROFILE MC32



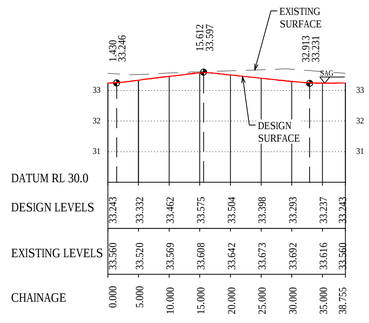
LIP LINE PROFILE MC35



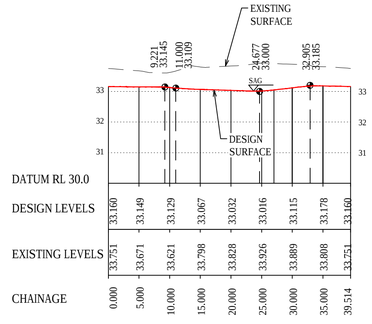
LIP LINE PROFILE MC39



LIP LINE PROFILE MC43



LIP LINE PROFILE MC45



LIP LINE PROFILE MC46

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 9 OF 14

PLAN No: 110350-CC-309 D
FILE No: 110350-CC-309
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:55:06 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-309.dwg

LIP LINE CONTROL - MC33					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0	297939.9144	6268849.204	257° 43' 33.4"	
T.P.	2.299	297937.6676	6268848.715	257° 43' 33.4"	
CENTRE		297938.4116	6268845.295		-3.5
C.T.P.	5.613	297935.2013	6268846.689	203° 28' 32.9"	
CENTRE		297932.4496	6268847.884		3
T.P.	8.484	297933.0577	6268844.947	258° 18' 20.8"	
T.P.	71.851	297871.0059	6268832.103	258° 18' 20.8"	
CENTRE		297931.8124	6268538.33		-300
END	76.567	297866.3962	6268831.111	257° 24' 18.9"	
START	96.558	297846.8859	6268826.752	257° 24' 18.9"	
CENTRE		297846.2317	6268829.679		3

LIP LINE CONTROL - MC33					
C.T.P.	99.425	297844.2177	6268827.456	312° 10' 15.0"	
CENTRE		297841.868	6268824.862		-3.5
T.P.	102.771	297841.1048	6268828.278	257° 24' 18.9"	
T.P.	107.882	297836.1166	6268827.163	257° 24' 18.9"	
CENTRE		297838.0682	6268818.429		-8.95
T.P.	121.817	297829.3074	6268816.598	168° 11' 50.6"	
T.P.	136.789	297832.3697	6268801.943	168° 11' 50.6"	
CENTRE		297791.2087	6268793.342		42.05
T.P.	142.958	297833.1849	6268795.833	176° 36' 13.0"	
END	146.231	297833.3788	6268792.566	176° 36' 13.0"	

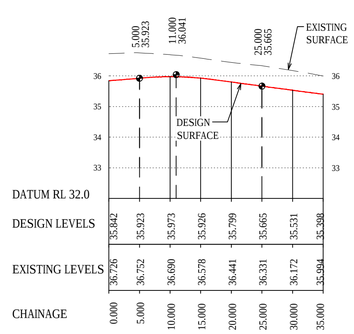
MEDIAN CONTROL - MC39					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297956.818	6268860.299	78° 8' 17.1"	
CENTRE		297956.941	6268859.712		0.6
C.T.P.	1.887	297957.063	6268859.124	258° 18' 18.2"	
CENTRE		298362.221	6266901.818		1998.8
T.P.	33.569	297926.090	6268852.457	257° 23' 48.8"	
T.P.	141.457	297820.802	6268828.916	257° 23' 48.8"	
CENTRE		297788.072	6268975.302		150
C.T.P.	153.754	297808.704	6268826.727	262° 5' 38.8"	
CENTRE		297808.622	6268827.322		0.6
C.T.P.	155.374	297808.293	6268827.824	56° 46' 10.4"	
CENTRE		297835.693	6268786.000		50
C.T.P.	168.932	297820.496	6268833.635	72° 18' 21.2"	
CENTRE		297829.614	6268805.054		30
C.T.P.	182.465	297833.868	6268834.751	98° 9' 6.3"	
CENTRE		297838.122	6268864.448		-30
T.P.	193.447	297844.780	6268835.196	77° 10' 38.9"	
T.P.	268.894	297918.346	6268851.940	77° 10' 38.9"	
CENTRE		298362.210	6266901.815		2000
END	308.253	297956.807	6268860.297	78° 18' 18.1"	

NOTES

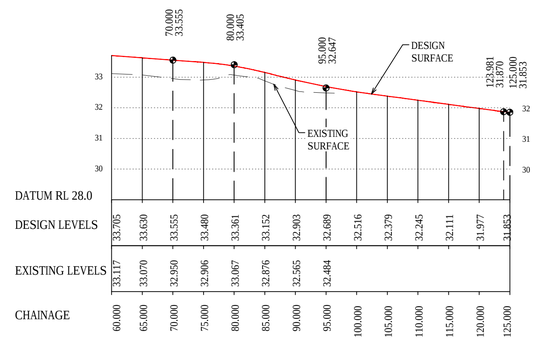
1. REFER TO 110350-CC-308 FOR SETTING OUT DETAILS OF MC36
2. REFER TO 110350-CC-311 FOR KERB RETURN PROFILE OF MC33
3. REFER TO 110350-CC-309 FOR KERB RETURN PROFILE OF MC39

LEGEND

- LIMIT OF ROADWORKS
- DESIGN CONTROL LINE
- SURFACE CONTOUR (MINOR)
- SURFACE CONTOUR (MINOR)



LIP LINE PROFILE MC37



LIP LINE PROFILE MC36

LIP LINE CONTROL - MC37					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0	297826.4657	6268858.496	171° 27' 10.0"	
T.P.	8.139	297827.6755	6268850.447	171° 27' 10.0"	
CENTRE		297836.5261	6268851.777		-8.95
T.P.	22.866	297838.5124	6268843.051	77° 10' 38.9"	
T.P.	71	297885.4459	6268853.733	77° 10' 38.9"	
CENTRE		297883.4596	6268862.46		-8.95
T.P.	84.391	297892.3102	6268863.79	351° 27' 10.5"	
END	101.368	297889.7871	6268880.578	351° 27' 10.5"	

1:200 (AT A1)
1:400 (AT A3)

METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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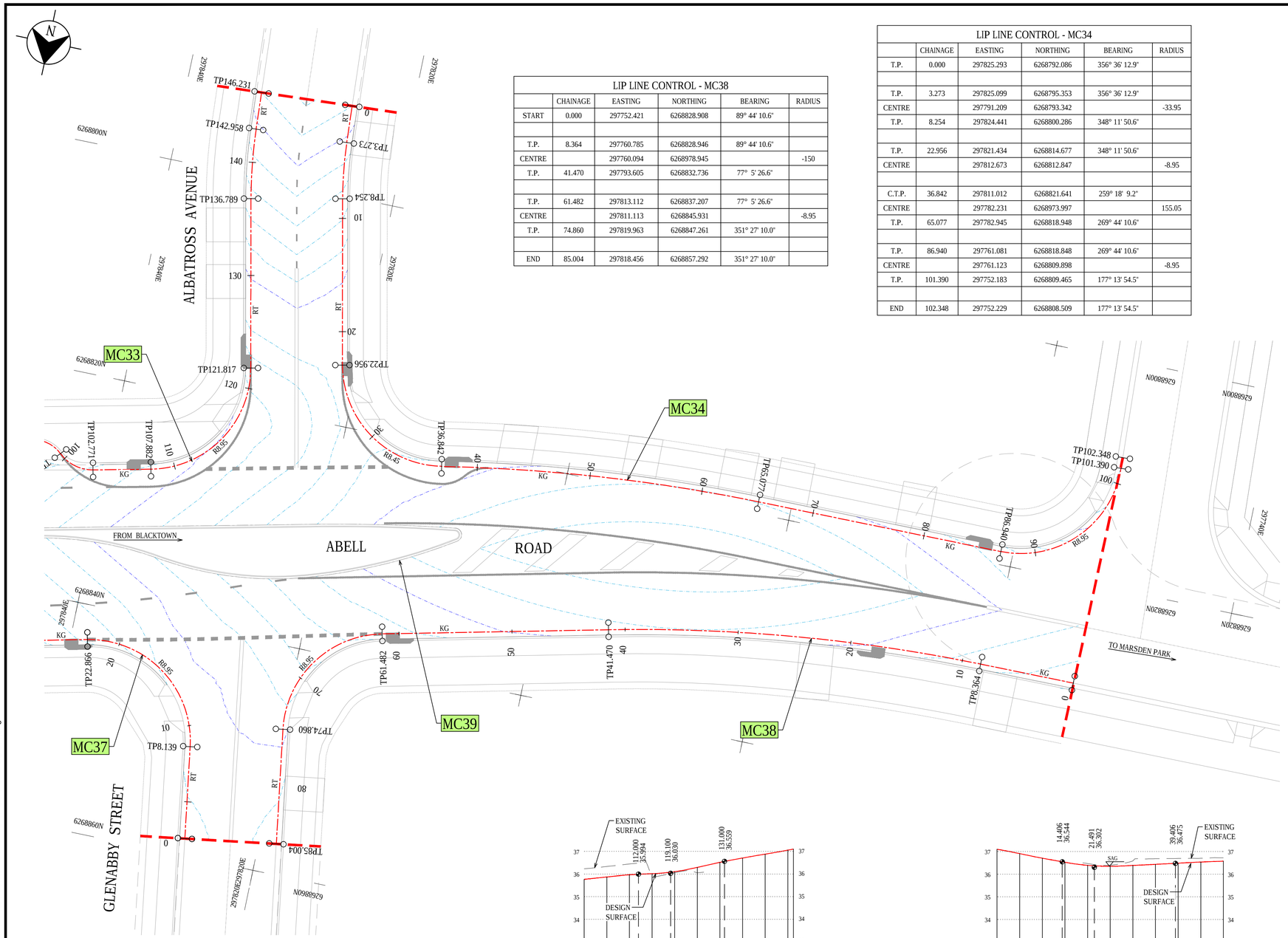
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 10 OF 14

PLAN No: 110350-CC-310 D
FILE No: 110350-CC-310
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:55:18 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-310.dwg



LIP LINE CONTROL - MC38					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297752.421	6268828.908	89° 44' 10.6"	
T.P.	8.364	297760.785	6268828.946	89° 44' 10.6"	
CENTRE		297760.094	6268978.945		-150
T.P.	41.470	297793.605	6268832.736	77° 5' 26.6"	
T.P.	61.482	297813.112	6268837.207	77° 5' 26.6"	
CENTRE		297811.113	6268845.931		-8.95
T.P.	74.860	297819.963	6268847.261	351° 27' 10.0"	
END	85.004	297818.456	6268857.292	351° 27' 10.0"	

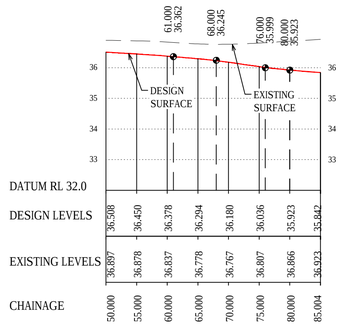
LIP LINE CONTROL - MC34					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
T.P.	0.000	297825.293	6268792.086	356° 36' 12.9"	
T.P.	3.273	297825.099	6268795.353	356° 36' 12.9"	
CENTRE		297791.209	6268793.342		-33.95
T.P.	8.254	297824.441	6268800.286	348° 11' 50.6"	
T.P.	22.956	297821.434	6268814.677	348° 11' 50.6"	
CENTRE		297812.673	6268812.847		-8.95
C.T.P.	36.842	297811.012	6268821.641	259° 18' 9.2"	
CENTRE		297782.231	6268973.997		155.05
T.P.	65.077	297782.945	6268818.948	269° 44' 10.6"	
T.P.	86.940	297761.081	6268818.848	269° 44' 10.6"	
CENTRE		297761.123	6268809.898		-8.95
T.P.	101.390	297752.183	6268809.465	177° 13' 54.5"	
END	102.348	297752.229	6268808.509	177° 13' 54.5"	

NOTES

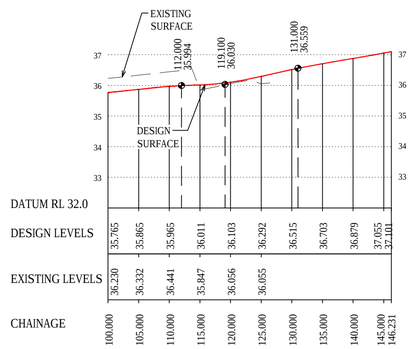
1. REFER TO 110350-CC-311 FOR SETTING OUT DETAILS OF MC33, MC37 AND MC 39
2. REFER TO 110350-CC-310 FOR KERB RETURN PROFILE OF MC 37
3. REFER TO 110350-CC-309 FOR KERB RETURN PROFILES OF MC39

LEGEND

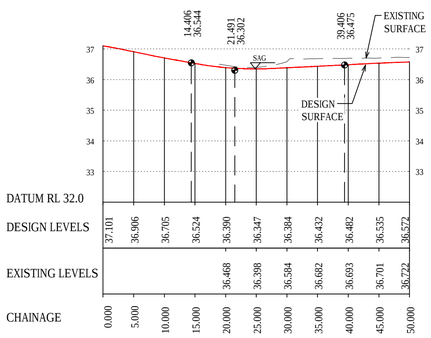
- LIMIT OF ROADWORKS
- DESIGN CONTROL LINE
- 28.5 SURFACE CONTOUR (MINOR)
- SURFACE CONTOUR (MINOR)



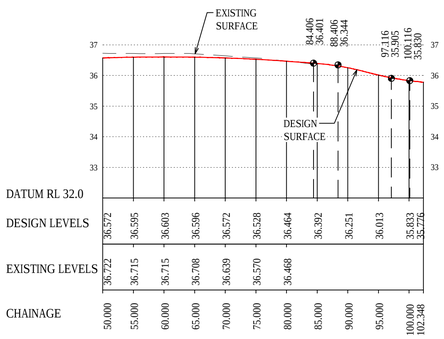
LIP LINE PROFILE MC38



LIP LINE PROFILE MC33



LIP LINE PROFILE MC34



LIP LINE PROFILE MC34

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
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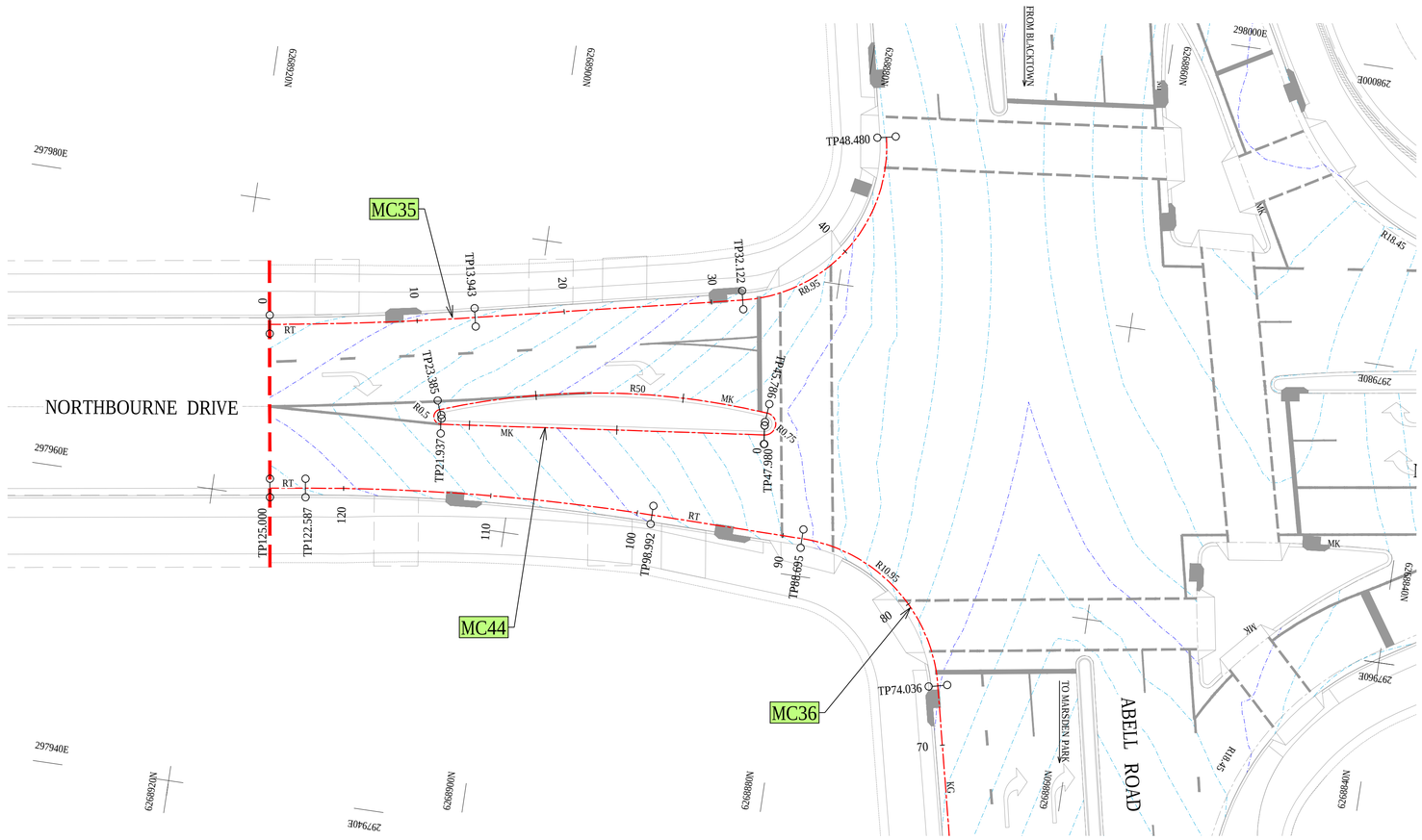
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 11 OF 14

PLAN No: 110350-CC-311 D
FILE No: 110350-CC-311
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:55:31 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-311.dwg



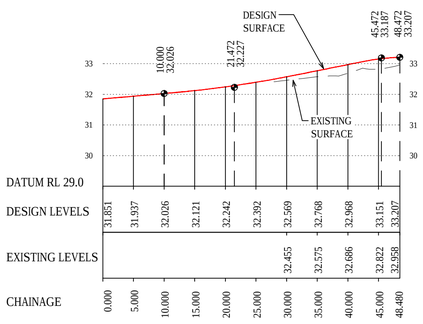
LEGEND

- LIMIT OF ROADWORKS
- DESIGN CONTROL LINE
- SURFACE CONTOUR (MINOR)
- SURFACE CONTOUR (MINOR)

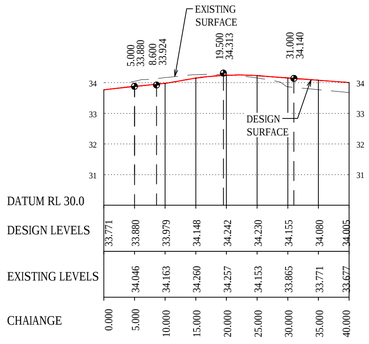
LIP LINE CONTROL - MC35					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297971.619	6268917.777	171° 22' 25.4"	
CENTRE		298194.073	6268951.525		-224.999
T.P.	13.943	297974.136	6268904.065	167° 49' 23.0"	
T.P.	32.122	297977.971	6268886.295	167° 49' 23.0"	
CENTRE		297988.186	6268888.499		-10.45
END	48.480	297990.334	6268878.273	78° 8' 18.7"	

LIP LINE CONTROL - MC36					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297897.798	6268881.783	171° 27' 28.1"	
T.P.	15.033	297900.031	6268866.917	171° 27' 28.1"	
CENTRE		297908.882	6268868.246		-8.95
T.P.	29.760	297910.868	6268859.519	77° 10' 38.9"	
T.P.	74.036	297954.041	6268869.346	77° 10' 38.9"	
CENTRE		297951.611	6268880.023		-10.95
T.P.	88.695	297962.560	6268879.931	0° 28' 39.6"	
T.P.	98.992	297962.646	6268890.229	0° 28' 39.6"	
CENTRE		297812.651	6268891.479		-150
T.P.	122.587	297960.990	6268913.740	351° 27' 55.1"	
END	125.000	297960.632	6268916.127	351° 27' 55.1"	

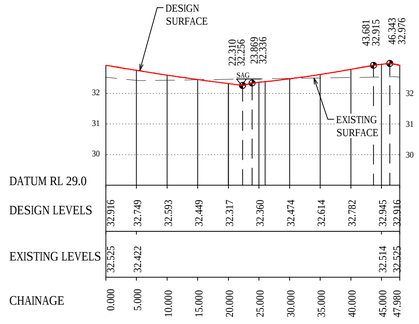
MEDIAN CONTROL - MC44					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297969.140	6268883.500	353° 25' 54.1"	
T.P.	21.937	297966.631	6268905.293	353° 25' 54.1"	
CENTRE		297967.128	6268905.351		0.5
C.T.P.	23.385	297967.595	6268905.527	159° 18' 24.9"	
CENTRE		297920.821	6268887.859		50
C.T.P.	45.786	297970.632	6268883.521	184° 58' 38.5"	
CENTRE		297969.885	6268883.586		0.75
END	47.980	297969.141	6268883.489	352° 35' 32.1"	



LIP LINE PROFILE MC35



LIP LINE PROFILE MC36



LIP LINE PROFILE MC44

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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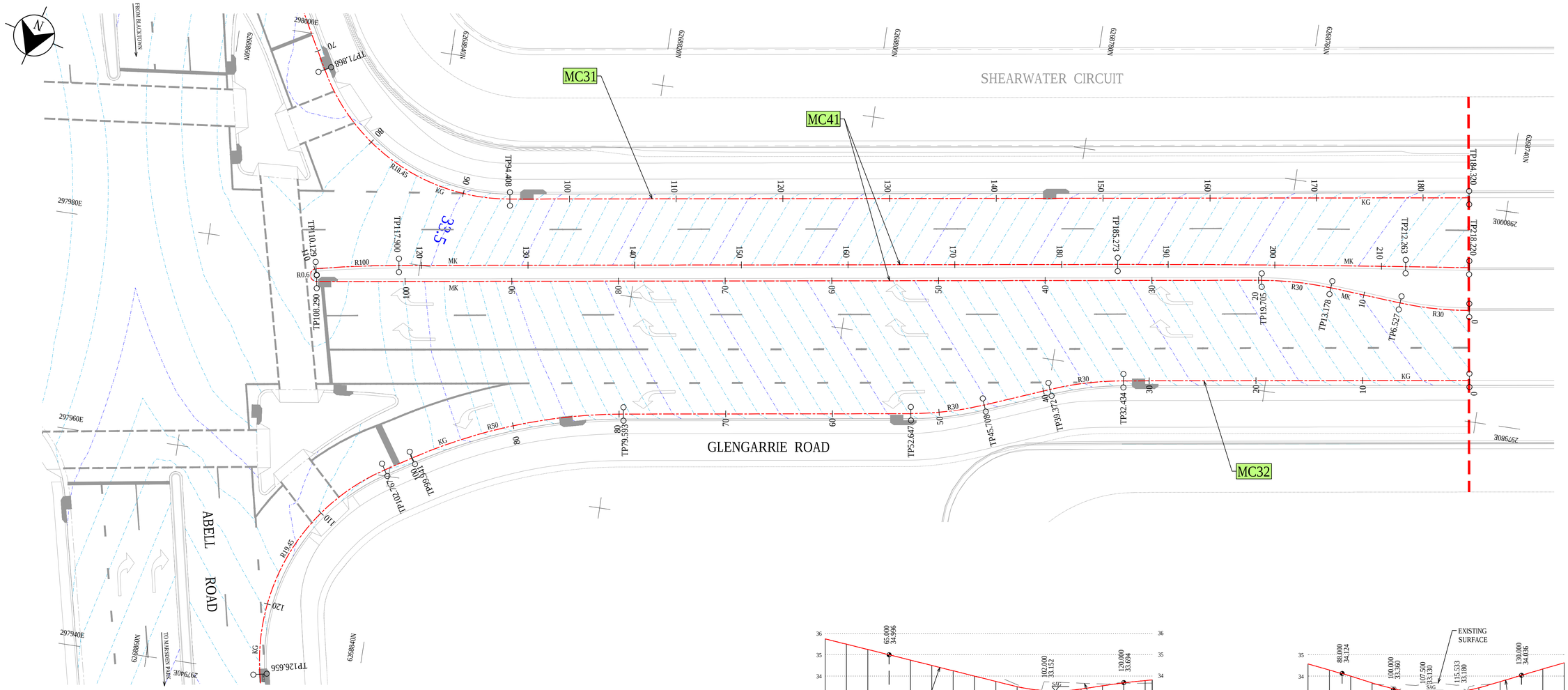
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 12 OF 14

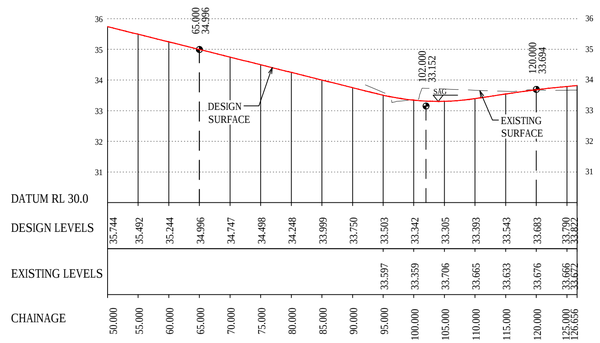
PLAN No: 110350-CC-312 D
FILE No: 110350-CC-312
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:55:43 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-312.dwg

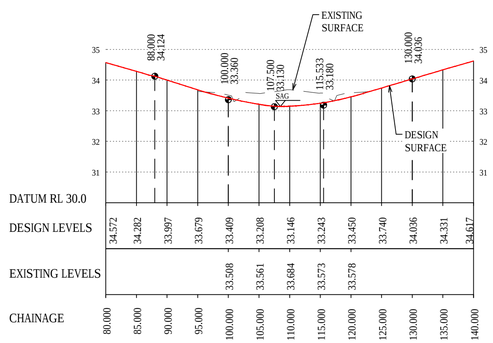


LIP LINE CONTROL - MC32					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297983.826	6268741.131	351° 27' 16.5"	
T.P.	32.434	297979.007	6268773.205	351° 27' 16.5"	
CENTRE		297949.340	6268768.747		-30
T.P.	39.372	297977.195	6268779.887	338° 12' 9.9"	
T.P.	45.708	297974.842	6268785.769	338° 12' 9.9"	
CENTRE		298002.698	6268796.909		30
T.P.	52.647	297973.031	6268792.451	351° 27' 16.5"	
T.P.	79.593	297969.027	6268819.098	351° 27' 16.5"	
CENTRE		297919.582	6268811.669		-50
T.P.	99.941	297962.047	6268838.063	328° 8' 14.4"	
T.P.	102.767	297960.556	6268840.463	328° 8' 14.4"	
CENTRE		297944.036	6268830.196		-19.45
END	126.656	297939.914	6268849.204	257° 45' 51.7"	

MEDIAN CONTROL - MC41					
	CHAINAGE	EASTING	NORTHING	BEARING	RADIUS
START	0.000	297990.303	6268742.109	351° 27' 16.5"	
CENTRE		298019.970	6268746.567		30
T.P.	6.527	297990.040	6268748.617	3° 55' 12.0"	
T.P.	13.178	297990.495	6268755.253	3° 55' 12.0"	
CENTRE		297960.565	6268757.304		-30
T.P.	19.705	297990.232	6268761.761	351° 27' 16.5"	
T.P.	108.290	297977.069	6268849.364	351° 27' 16.5"	
CENTRE		297977.662	6268849.453		0.6
C.T.P.	110.129	297978.247	6268849.588	167° 0' 7.1"	
CENTRE		297880.809	6268827.096		100
T.P.	117.900	297979.699	6268841.955	171° 27' 16.5"	
T.P.	185.273	297989.710	6268775.330	171° 27'16.5"	
CENTRE		296506.362	6268552.440		1500
T.P.	212.263	297993.480	6268748.605	172° 29' 7.9"	
END	218.220	297994.259	6268742.699	172° 29' 7.9"	



LIP LINE PROFILE MC32



MEDIAN PROFILE MC41

LEGEND

- LIMIT OF ROADWORKS
- 10 DESIGN CONTROL LINE
- 28.5 SURFACE CONTOUR (MINOR)
- SURFACE CONTOUR (MINOR)

NOTES

1. REFER TO 110350-CC-308 FOR SETTING OUT DETAILS OF MC31
2. REFER TO 110350-CC-309 FOR SETTING KERB PROFILE OF MC31

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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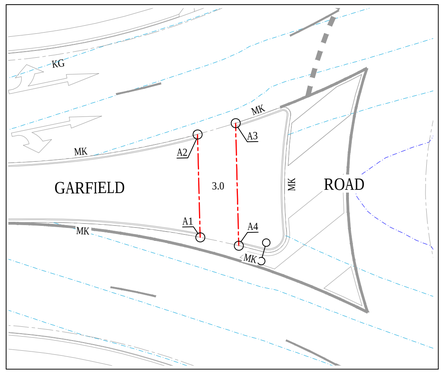
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

ROAD SETTING OUT DETAILS - SHEET 13 OF 14

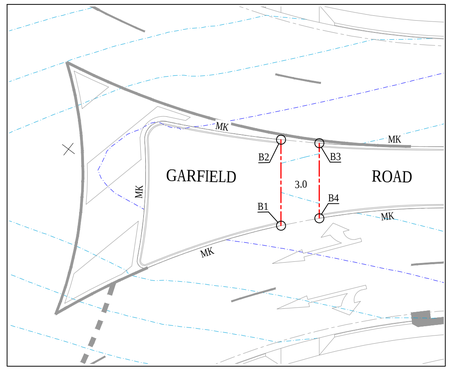
PLAN No: 110350-CC-313 D
FILE No: 110350-CC-313
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:55:55 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-313.dwg



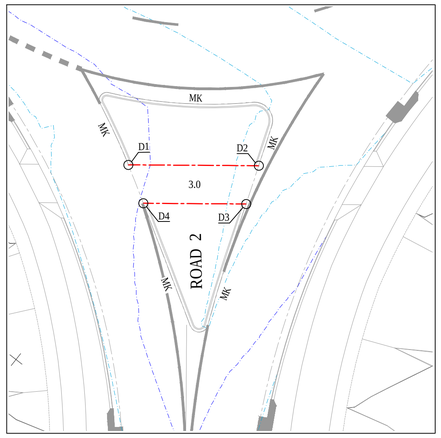
DETAIL - V

POINT	EASTING	NORTHING
A1	298723.604	6269139.819
A2	298727.869	6269134.618
A3	298726.361	6269132.514
A4	298721.286	6269138.703



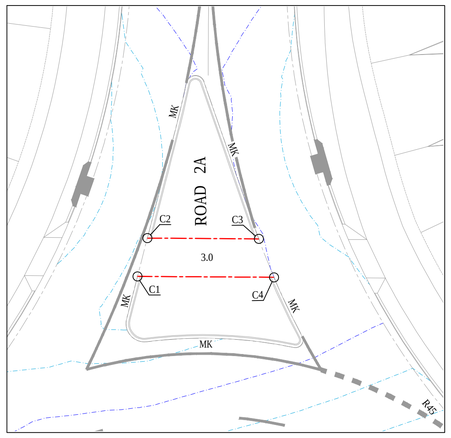
DETAIL - W

POINT	EASTING	NORTHING
C1	298721.943	6269092.427
C2	298722.967	6269090.061
C3	298717.195	6269085.634
C4	298714.874	6269087.004



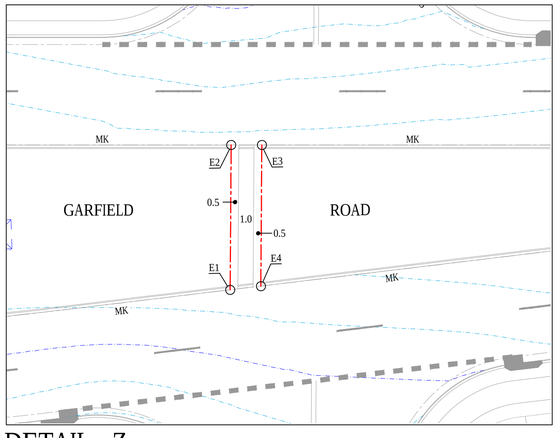
DETAIL - Y

POINT	EASTING	NORTHING
B1	298665.989	6269095.425
B2	298669.433	6269090.997
B3	298667.319	6269089.643
B4	298664.311	6269093.510



DETAIL - X

POINT	EASTING	NORTHING
D1	298682.011	6269145.470
D2	298675.260	6269140.292
D3	298674.379	6269142.767
D4	298679.700	6269146.849



DETAIL - Z

POINT	EASTING	NORTHING
E1	298787.496	6269195.390
E2	298793.253	6269187.884
E3	298791.675	6269186.656
E4	298786.064	6269193.970

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

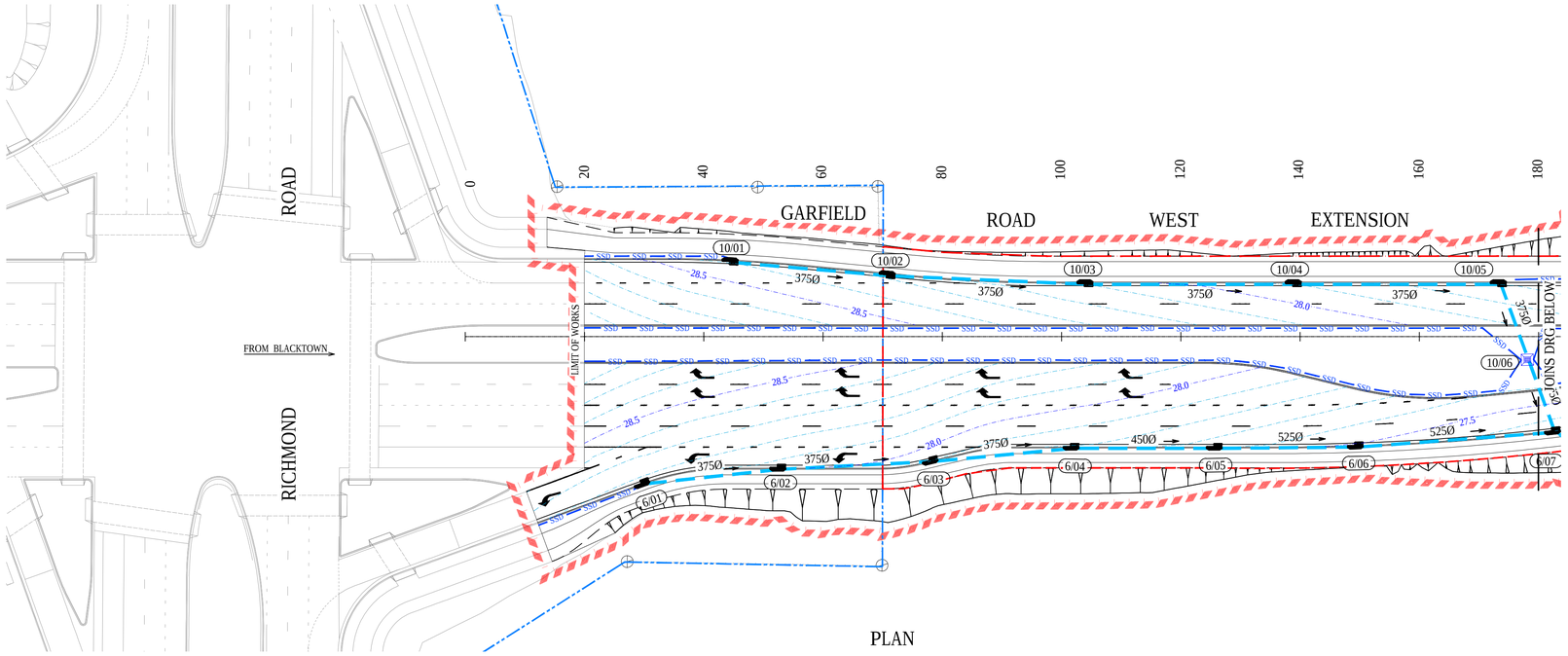
ROAD SETTING OUT DETAILS - SHEET 14 OF 14

PLAN No: 110350-CC-314 D

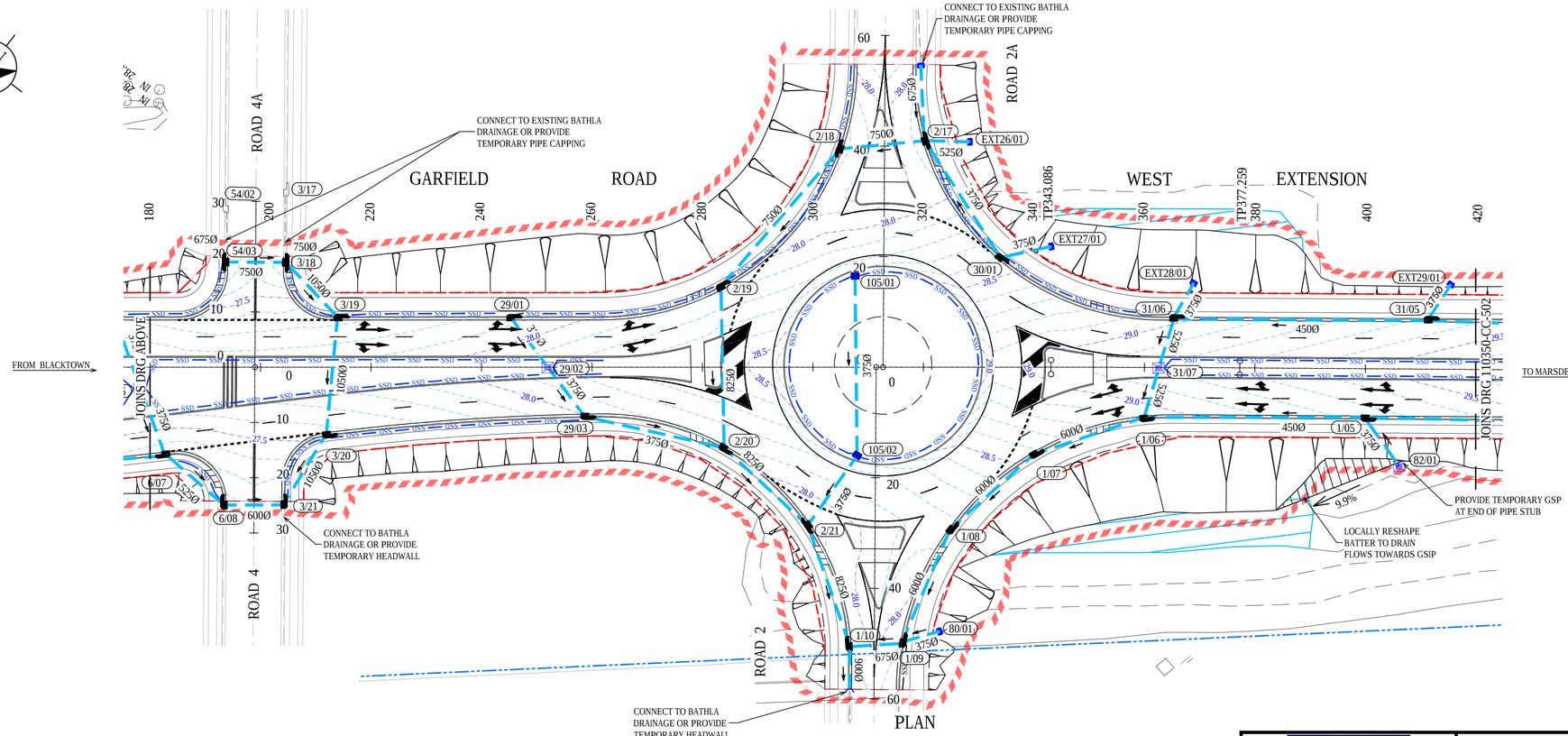
FILE No: 110350-CC-314

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:56:15 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-314.dwg



PLAN



PLAN

1:500 (AT A1)
1:1000 (AT A3)

METRES

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS REFER TO 110350-CC-003
2. FOR TO STORMWATER PIT SCHEDULE SETTING OUT REFER TO 110350-CC-525
3. TURF ALL OPEN DRAINS AND CHANNELS.

LEGEND

- NEW STORMWATER PIPE (RCP) AND CAP
- NEW GRATED SURFACE INLET PIT (GSIP)
- NEW GRATED KERB INLET PIT (0.9m KIP)
- NEW GRATED KERB INLET PIT (1.8m KIP)
- NEW JUNCTION PIT
- NEW GRATED KERB INLET PIT (SAG)
- NEW MEDIAN PIT (RMS TYPE SF)
- NEW TRAFFIC ISLAND PIT (RMS TYPE SL)
- NEW STORMWATER HEADWALL (SMALL - LARGE)
- 3/01 — NEW STORMWATER (LINE 3, PIT 01)
- 750Ø — STORMWATER DIRECTION OF FLOW AND PIPE SIZE
- LIMIT OF WORKS
- NEW PEDESTRIAN RAMP
- NEW REINFORCED CONCRETE BOX CULVERT (RCBC)
- 31.0 — DESIGN CONTOUR (MAJOR)
- DESIGN CONTOUR (MINOR)
- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- SSD — SUBSOIL DRAIN
- DAM AREA TO BE BACKFILLED

AMENDMENT		DES	DRN	CKD	APR	DATE
I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

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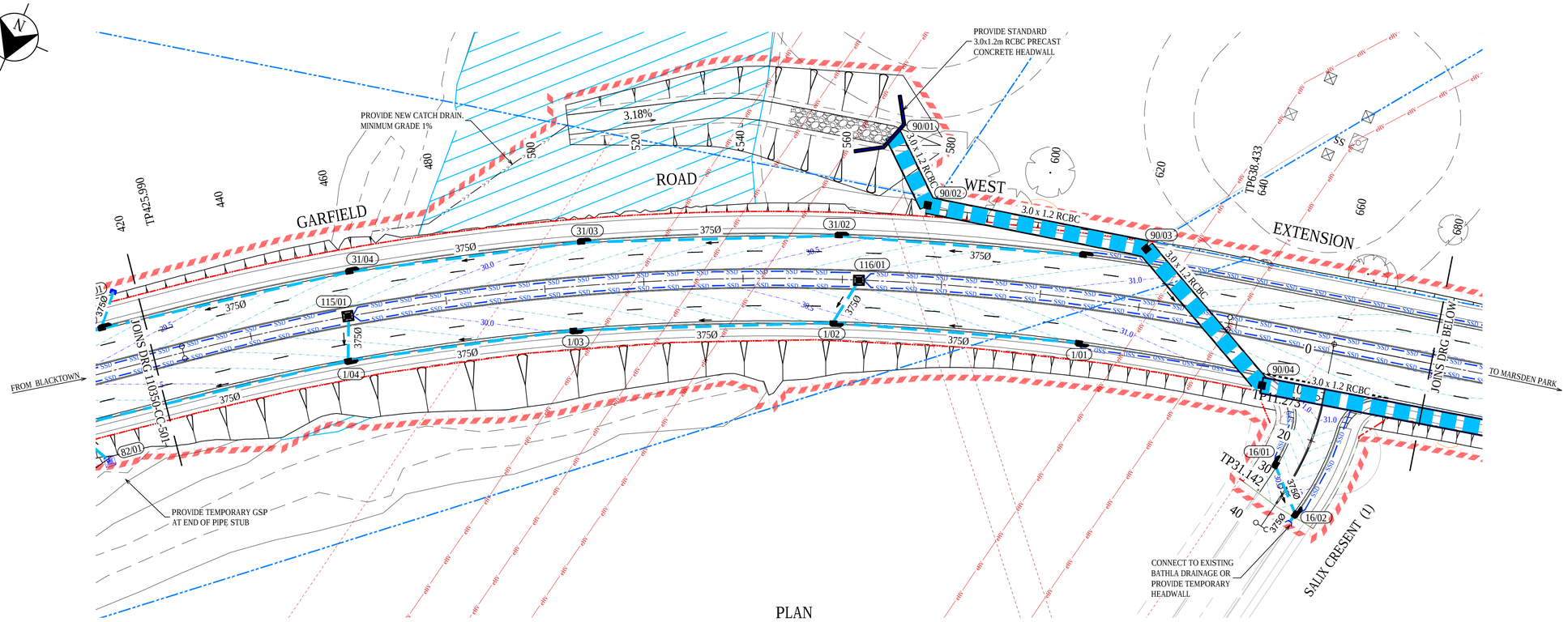
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

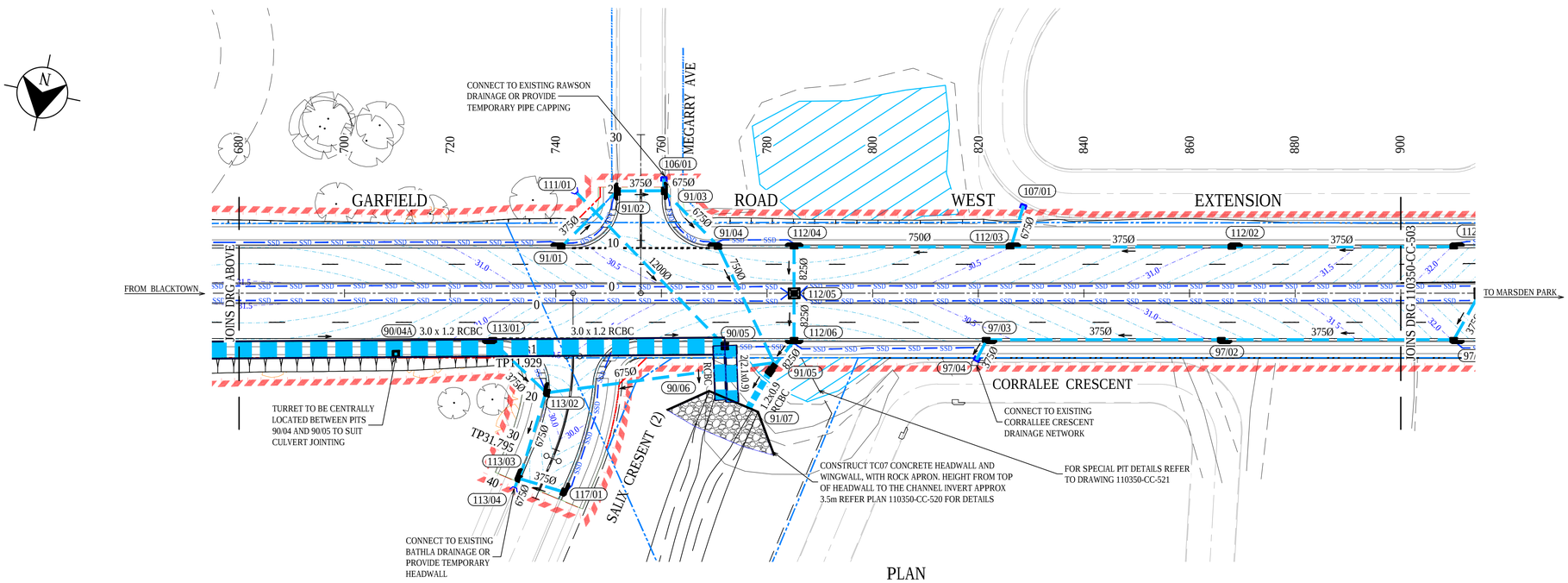
STORMWATER MANAGEMENT (SHEET 1 OF 4)

PLAN No: 110350-CC-501 I
FILE No: 110350-CC-501
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:56:32 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-501.dwg



PLAN



PLAN

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS REFER TO 110350-CC-003
2. FOR TO STORMWATER PIT SCHEDULE SETTING OUT REFER TO 110350-CC-525
3. TURF ALL OPEN DRAINS AND CHANNELS.

LEGEND

- NEW STORMWATER PIPE (RCP) AND CAP
- NEW GRATED SURFACE INLET PIT (GSIP)
- NEW GRATED KERB INLET PIT (0.9m KIP)
- NEW GRATED KERB INLET PIT (1.8m KIP)
- NEW JUNCTION PIT
- NEW GRATED KERB INLET PIT (SAG)
- NEW MEDIAN PIT (RMS TYPE SF)
- NEW TRAFFIC ISLAND PIT (RMS TYPE SL)
- NEW STORMWATER HEADWALL (SMALL - LARGE)
- 3/01 — NEW STORMWATER (LINE 3, PIT 01)
- 750Ø — STORMWATER DIRECTION OF FLOW AND PIPE SIZE
- LIMIT OF WORKS
- NEW PEDESTRIAN RAMP
- NEW REINFORCED CONCRETE BOX CULVERT (RCBC)
- 31.0 — DESIGN CONTOUR (MAJOR)
- DESIGN CONTOUR (MINOR)
- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- SSD — SUBSOIL DRAIN
- DAM AREA TO BE BACKFILLED

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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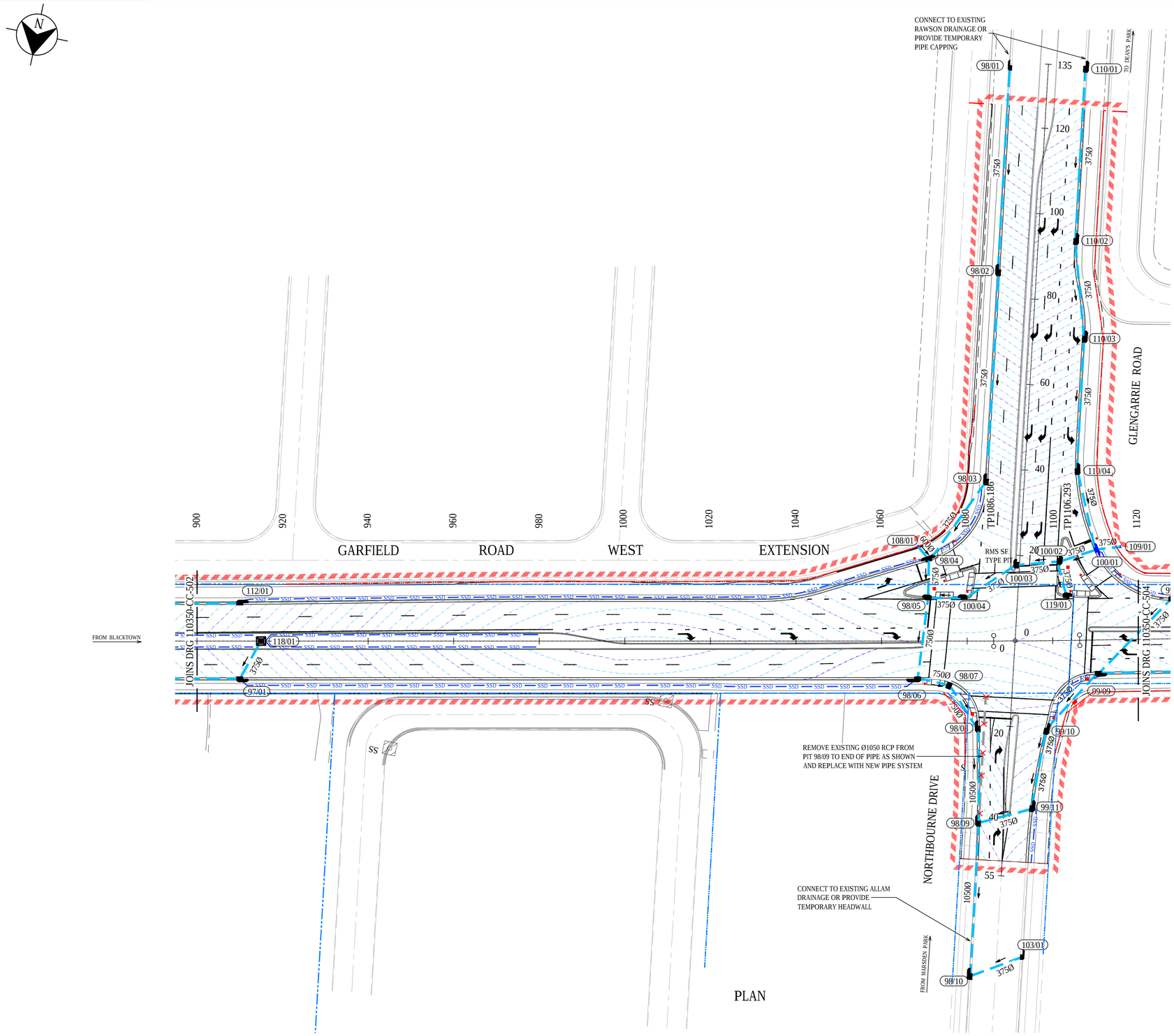
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

STORMWATER MANAGEMENT (SHEET 2 OF 4)

PLAN No: 110350-CC-502 I
FILE No: 110350-CC-502
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:56:49 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-502.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS REFER TO 110350-CC-003
2. FOR TO STORMWATER PIT SCHEDULE SETTING OUT REFER TO 110350-CC-525
3. TURF ALL OPEN DRAINS AND CHANNELS.

LEGEND

- NEW STORMWATER PIPE (RCP) AND CAP
- NEW GRATED SURFACE INLET PIT (GSIP)
- NEW GRATED KERB INLET PIT (0.9m KIP)
- NEW GRATED KERB INLET PIT (1.8m KIP)
- NEW JUNCTION PIT
- NEW GRATED KERB INLET PIT (SAG)
- NEW MEDIAN PIT (RMS TYPE SF)
- NEW TRAFFIC ISLAND PIT (RMS TYPE SL)
- NEW STORMWATER HEADWALL (SMALL - LARGE)
- 3/01 — NEW STORMWATER (LINE 3, PIT 01)
- 750Ø — STORMWATER DIRECTION OF FLOW AND PIPE SIZE
- LIMIT OF WORKS
- NEW PEDESTRIAN RAMP
- NEW REINFORCED CONCRETE BOX CULVERT (RCBC)
- EXISTING STORMWATER TO BE REMOVED
- 31.0 — DESIGN CONTOUR (MAJOR)
- DESIGN CONTOUR (MINOR)
- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- SSD — SUBSOIL DRAIN
- DAM AREA TO BE BACKFILLED
- TRAFFIC CONTROL SIGNAL POST
- TRAFFIC CONTROL SIGNAL MAST ARM POST

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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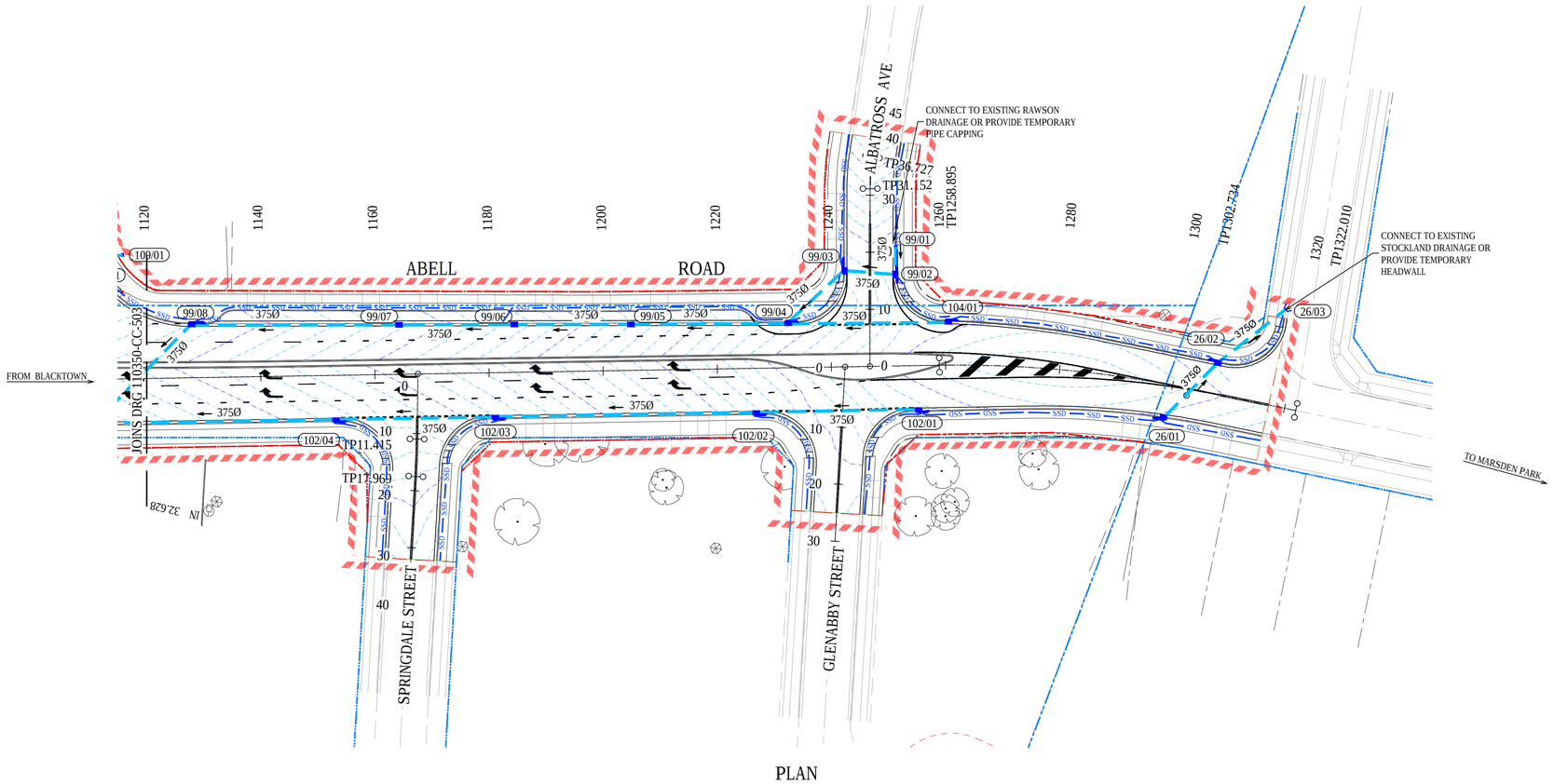
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

STORMWATER MANAGEMENT (SHEET 3 OF 4)

PLAN No: 110350-CC-503 I
FILE No: 110350-CC-503
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:57:03 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-503.dwg



PLAN

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50

METRES

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS REFER TO 110350-CC-003
2. FOR TO STORMWATER PIT SCHEDULE SETTING OUT REFER TO 110350-CC-525
3. TURF ALL OPEN DRAINS AND CHANNELS.

LEGEND

- NEW STORMWATER PIPE (RCP) AND CAP
- NEW GRATED SURFACE INLET PIT (GSIP)
- NEW GRATED KERB INLET PIT (0.9m KIP)
- NEW GRATED KERB INLET PIT (1.8m KIP)
- NEW JUNCTION PIT
- NEW GRATED KERB IINLET PIT (SAG)
- NEW MEDIAN PIT (RMS TYPE SF)
- NEW TRAFFIC ISLAND PIT (RMS TYPE SL)
- NEW STORMWATER HEADWALL (SMALL - LARGE)
- 3/01 — NEW STORMWATER (LINE 3, PIT 01)
- 750Ø — STORMWATER DIRECTION OF FLOW AND PIPE SIZE
- LIMIT OF WORKS
- NEW PEDESTRIAN RAMP
- NEW REINFORCED CONCRETE BOX CULVERT (RCBC)
- 31.0 — DESIGN CONTOUR (MAJOR)
- DESIGN CONTOUR (MINOR)
- NEW ROAD BOUNDARY
- EXISTING PROPERTY BOUNDARY
- SSD — SUBSOIL DRAIN
- DAM AREA TO BE BACKFILLED

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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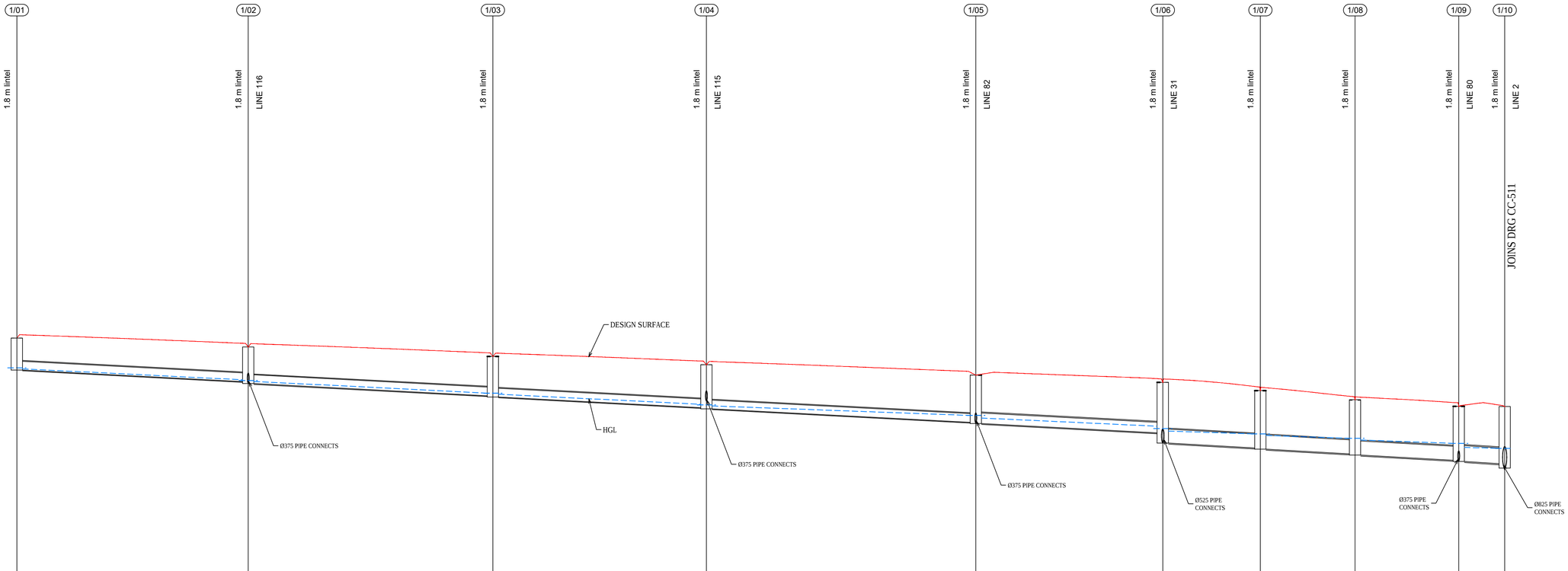
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

STORMWATER MANAGEMENT (SHEET 4 OF 4)

PLAN No: 110350-CC-504 H
FILE No: 110350-CC-504
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:57:16 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-504.dwg



DATUM (m)	20.00									
PEAK FLOW (L/s)	17	39	61	81	223	519	522	535	613	
PIPE SIZE (mm)	375	375	375	375	450	600	600	600	675	
PIPE CLASS	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	
PIPE GRADE (%)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
PIPE COVER MINIMUM	1.10	1.30	1.47	1.62	1.62	1.99	1.82	1.83	1.69	
FULL PIPE VELOCITY (m/s)	0.93	1.25	1.41	1.37	1.89	2.07	2.13	1.89	1.74	
HGL GRADE (%)	0.95	0.95	0.94	0.71	0.87	0.59	0.62	0.64	0.47	
WAE										
HYDRAULIC GRADE LINE	29.47	29.00 28.93	28.43 28.38	27.95 27.88	27.47 27.36	27.01 26.80	26.68 26.62	26.49 26.42	26.28 26.11	26.06
INVERT LEVEL	29.42	28.93 28.84	28.31 28.26	27.81 27.76	27.18 27.13	26.73 26.29	26.08 26.03	25.83 25.78	25.55 25.50	25.41
DESIGN SURFACE LEVEL	30.79	30.41	30.00	29.65	29.20	28.89	28.54	28.15	27.86	27.86
ROAD CHAINAGE	609.00	558.44	504.98	458.36	400.00	359.91	15.99	29.73	50.23	50.60
PIPE CHAINAGE	0.00	49.57	101.98	147.73	205.45	245.51	266.41	286.70	308.92	318.76

LINE 1

H 1:500 (AT A1) — 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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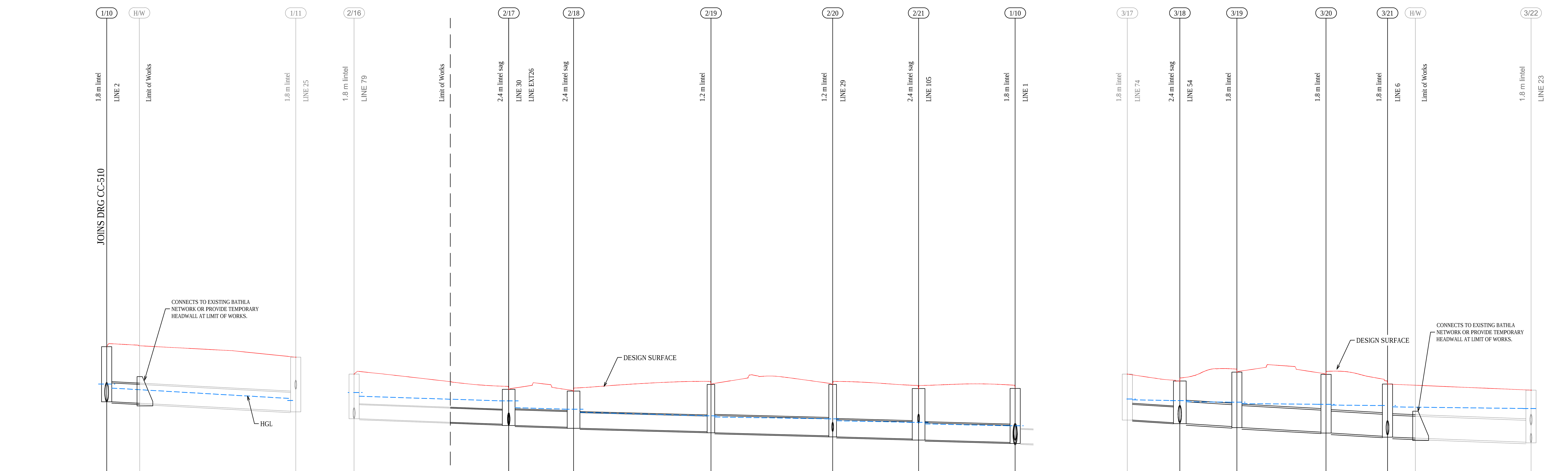
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

DRAINAGE PROFILES - LINE 1

PLAN No: 110350-CC-510 H
FILE No: 110350-CC-510
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:57:25 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-510.dwg



LINE 1

DATUM (m) 19.00

	1/10 – H/W	H/W – 1/11
PEAK FLOW (L/s)	1568	1568
PIPE SIZE (mm)	900	900
PIPE CLASS	RRJ2	RRJ2
PIPE GRADE (%)	1.0	1.0
PIPE COVER MINIMUM	1.65	1.65
FULL PIPE VELOCITY (m/s)	2.85	2.85
HGL GRADE (%)	1.1	1.1

	1/10	H/W	1/11
WAE			
HYDRAULIC GRADE LINE	26.06 / 25.87	25.79	25.37 / 25.28
INVERT LEVEL	25.41 / 25.21	25.14	24.76 / 24.73
DESIGN SURFACE LEVEL	27.86	27.90	27.35
ROAD CHAINAGE	50.60		96.27
PIPE CHAINAGE	318.76	326.73	364.10

LINE 2

DATUM (m) 21.00

	2/16 – Limit of Works	Limit of Works – 2/17	2/17 – 2/18	2/18 – 2/19	2/19 – 2/20	2/20 – 2/21	2/21 – 1/10
PEAK FLOW (L/s)			839	873	875	902	962
PIPE SIZE (mm)	675	675	750	750	825	825	825
PIPE CLASS	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2
PIPE GRADE (%)	0.7	0.7	0.5	0.5	0.5	0.5	0.5
PIPE COVER MINIMUM	1.10	1.10	1.00	1.14	1.49	1.70	1.74
FULL PIPE VELOCITY (m/s)	1.98	1.98	1.90	1.98	1.72	1.73	1.94
HGL GRADE (%)	0.6	0.6	0.48	0.52	0.3	0.35	0.39

	2/16	Limit of Works	2/17	2/18	2/19	2/20	2/21	1/10
WAE								
HYDRAULIC GRADE LINE	27.65 / 27.48		27.25 / 26.93	26.86 / 26.71	26.54 / 26.48	26.39 / 26.30	26.23 / 26.15	26.06 / 25.87
INVERT LEVEL	26.53 / 26.40		26.14 / 26.08	25.99 / 25.94	25.78 / 25.73	25.58 / 25.53	25.43 / 25.38	25.26 / 25.21
DESIGN SURFACE LEVEL	28.54		27.81	27.73	28.04	28.05	27.85	27.86
ROAD CHAINAGE	77.73		41.02	291.72			28.72	50.60
PIPE CHAINAGE	390.49		427.58	443.14	476.06	505.26	525.86	549.02

LINE 3

DATUM (m) 20.00

	3/17 – 3/18	3/18 – 3/19	3/19 – 3/20	3/20 – 3/21	3/21 – H/W	H/W – 3/22
PEAK FLOW (L/s)	671	1271	1284	1244		1397
PIPE SIZE (mm)	750	1050	1050	1050		1050
PIPE CLASS	RRJ2	RRJ2	RRJ2	RRJ2		RRJ2
PIPE GRADE (%)	1.0	1.0	1.0	1.0		0.7
PIPE COVER MINIMUM	1.23	1.10	1.59	1.61		1.38
FULL PIPE VELOCITY (m/s)	2.22	2.10	2.22	2.27		2.19
HGL GRADE (%)	0.3	0.13	0.14	0.17		0.23

	3/17	3/18	3/19	3/20	3/21	H/W	3/22
WAE							
HYDRAULIC GRADE LINE	26.35 / 26.32	26.28 / 26.22	26.20 / 26.12	26.10 / 26.06	26.04 / 25.97	25.95	25.90 / 25.85
INVERT LEVEL	25.83 / 25.34	25.21 / 25.16	25.03 / 24.98	24.76 / 24.71	24.56 / 24.51	24.47	24.27 / 24.24
DESIGN SURFACE LEVEL	27.54	27.21	27.63	27.52	27.06	27.00	26.77
ROAD CHAINAGE	263.10	275.69	213.96	211.94	25.96		60.37
PIPE CHAINAGE	379.48	392.07	405.76	427.14	441.88	44.025	476.29

H 1:500 (AT A1) — 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750

P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:

DATUM:

ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

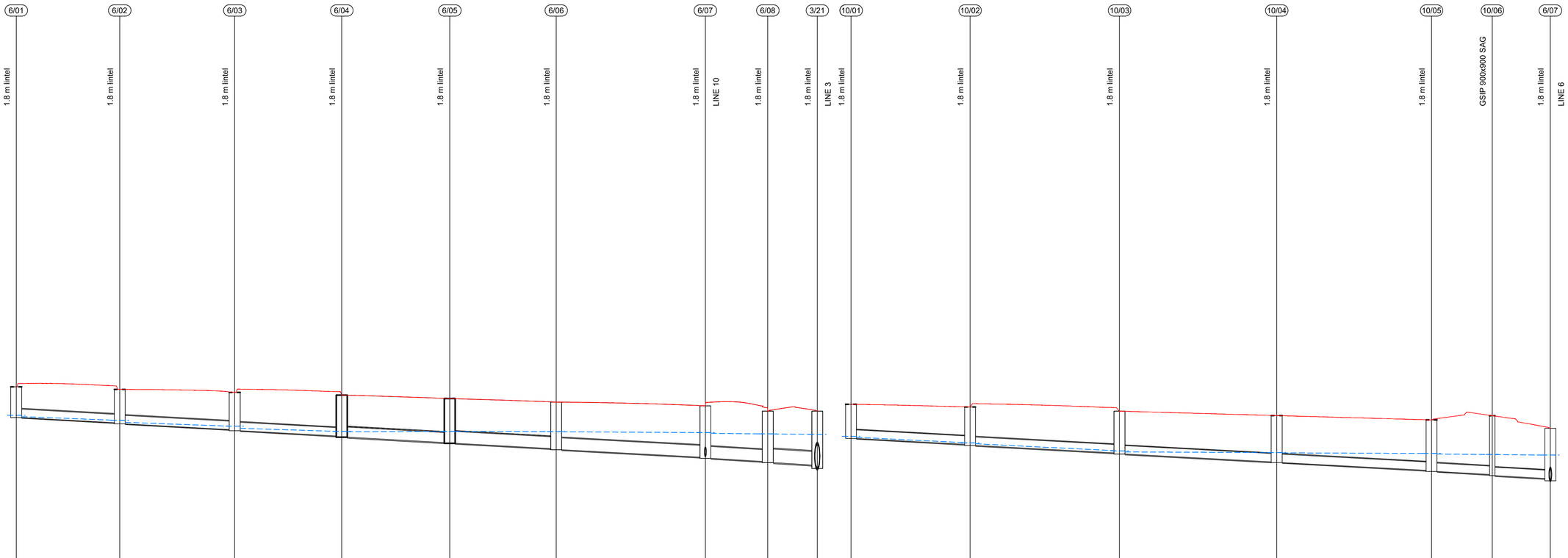
DRAINAGE PROFILES - LINE 1, LINE 2 & LINE 3

PLAN No: 110350-CC-511 H

FILE No: 110350-CC-511

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:57:36 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-511.dwg



DATUM (m)	20.00																				21.00			
PEAK FLOW (L/s)	19		46		73		110		134		160		288		309		16		30		51		76		98		109
PIPE SIZE (mm)	375		375		375		450		525		525		525		600		375		375		375		375		375		375
PIPE CLASS	RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2
PIPE GRADE (%)	1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0		1.0
PIPE COVER MINIMUM	1.10		1.12		1.43		1.37		1.41		1.55		1.89		1.70		1.10		1.45		1.49		1.67		1.94		1.89
FULL PIPE VELOCITY (m/s)	0.82		1.13		1.36		1.55		1.66		1.40		1.50		1.23		0.89		1.14		1.28		1.28		1.22		1.30
HGL GRADE (%)	0.69		0.67		0.57		-0.1		0.04		0.11		0.18		0.09		0.89		0.93		0.09		0.07		0.16		0.16
WAE																											
HYDRAULIC GRADE LINE	26.82	26.66	26.57	26.40	26.30	26.17	26.15	26.16	26.16	26.15	26.11	26.08	26.05	26.05	26.04	25.97	26.90	26.66	26.62	26.31	26.25	26.22	26.21	26.19	26.16	26.13	26.11	26.08
INVERT LEVEL	26.78	26.55	26.50	26.24	26.19	25.96	25.91	25.67	25.64	25.40	25.35	25.02	24.97	24.83	24.78	24.67	24.51	26.85	26.59	26.54	26.21	26.16	25.81	25.78	25.43	25.38	25.25	25.20	25.07	24.97
DESIGN SURFACE LEVEL	28.14		28.03		27.90		27.77		27.62		27.47		27.30		27.06		27.06	28.37		28.25	26.21	28.06		27.87		27.67		27.86		27.30
ROAD CHAINAGE															24.96		25.96	45.02		71.31		104.48		139.41		173.80		178.07		
PIPE CHAINAGE	0.00		22.99		48.54		72.31		96.31		119.96		153.09		166.96		177.96	0.00		26.44		59.63		94.57		128.96		142.46		155.35

LINE 6

LINE 10

H 1:500 (AT A1) — 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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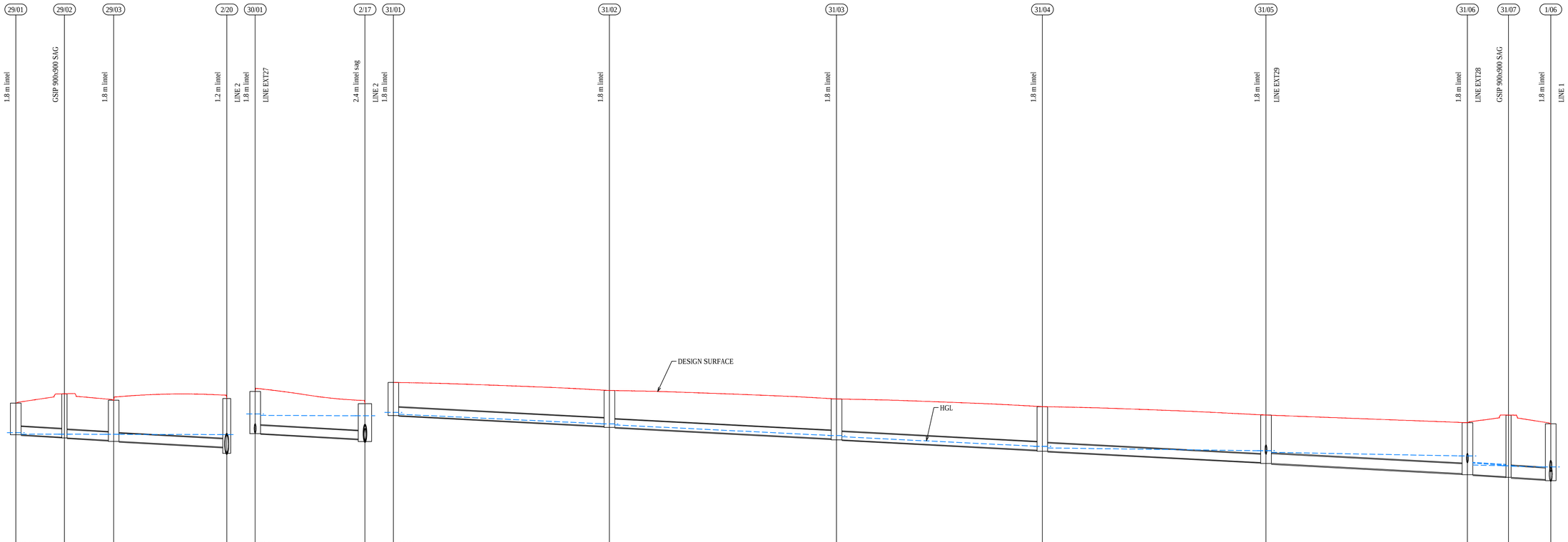
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

DRAINAGE PROFILES - LINE 6 & LINE 10

PLAN No: 110350-CC-512 H
FILE No: 110350-CC-512
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:57:48 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-512.dwg



DATUM (m)	21.00								21.00								23.00								
PEAK FLOW (L/s)	14		19		28				67				36		60		84		110		188		298		293
PIPE SIZE (mm)	375		375		375				375				375		375		375		375		450		525		525
PIPE CLASS	RRJ2		RRJ2		RRJ2				RRJ2				RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2
PIPE GRADE (%)	1.0		1.0		1.0				1.0				1.0		1.0		1.0		1.0		1.0		1.0		1.0
PIPE COVER MINIMUM	1.10		1.47		1.64				1.37				1.10		1.28		1.46		1.63		1.72		1.87		2.05
FULL PIPE VELOCITY (m/s)	0.76		0.96		0.96				0.71				1.07		1.39		1.53		1.55		1.29		1.46		1.71
HGL GRADE (%)	0.03		0.01		0.03				0.08				0.89		0.94		0.93		0.25		0.36		0.36		0.38
WAE																									
HYDRAULIC GRADE LINE	26.41		26.41		26.40		26.39	26.30	27.27			27.25	26.93	29.32		28.88	28.84		28.35	28.29		27.86	27.78		27.65	27.58		27.41	27.00	26.96	26.95	26.91	26.80
INVERT LEVEL	26.38	26.27	26.24	26.13	26.08		25.82	25.53	26.44		26.19	26.08	29.27		28.77	28.72		28.20	28.15		27.68	27.63		27.12	27.07		26.61	26.56	26.47	26.43	26.34	26.29
DESIGN SURFACE LEVEL	27.83		28.26		27.97		28.05		28.37		27.81		30.78		30.41		30.02		29.67		29.29		28.95		29.28	28.89
ROAD CHAINAGE	245.24		251.95		258.70						41.02		607.60		559.03		508.00		461.78		411.31		365.24		362.62	359.91
PIPE CHAINAGE	0.00		11.13		22.40		48.25		0.00			25.12	-245.73		-196.32		-144.38		-97.31		-46.16		-0.09		9.31	18.97

LINE 29 LINE 30 LINE 31

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750

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AZIMUTH:

DATUM:

ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

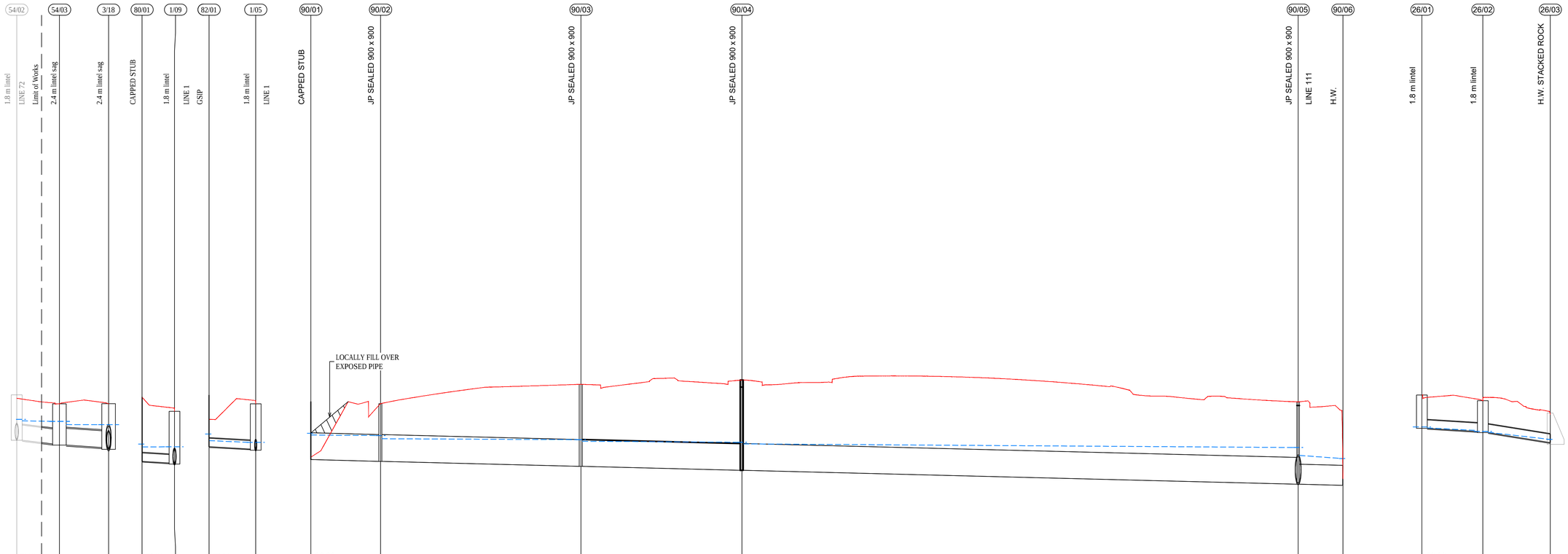
DRAINAGE PROFILES - LINE 29 & LINE 30 & LINE 31

PLAN No: 110350-CC-513 H

FILE No: 110350-CC-513

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:57:58 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-513.dwg



DATUM (m)	20.00				21.00		22.00		23.00												29.00			
PEAK FLOW (L/s)	597	598	601		94		126		6071	6074		6105		6105			7964				6	15		
PIPE SIZE (mm)	675	675	750		375		375		3000x1200	3000x1200		3000x1200		3000x1200			(2x)2100x900				375	375		
PIPE CLASS	RRJ2	RRJ2	RRJ2		RRJ2		RRJ2		Box Culvert	Box Culvert		Box Culvert		Box Culvert			Box Culvert				RRJ2	RRJ2		
PIPE GRADE (%)	1.7	1.7	1.0		1.0		1.0		0.5	0.5		0.5		0.5			0.5				1.0	2.9		
PIPE COVER MINIMUM	1.10	1.10	1.11		2.07		0.82		-1.09	1.04		2.31		2.37			2.56				0.98	1.10		
FULL PIPE VELOCITY (m/s)	1.84	1.84	1.48		0.87		1.22		1.95	1.96		1.84		1.70			2.11				0.64	0.66		
HGL GRADE (%)	0.25	0.25	0.02		-0.07		0.78		0.15	0.09		0.12		0.13			1.42				0.84	2.1		
WAE																								
HYDRAULIC GRADE LINE	26.57	26.45	26.42	26.42	26.28	26.28	26.22	26.27	26.28	26.11	27.56	27.47	27.36	28.81	28.78	28.64	28.60	28.52	28.48	28.41	28.25	27.89	27.75	35.12	35.01	34.93	34.61
INVERT LEVEL	25.98	25.57	25.47	25.41	25.36	25.25	25.16	25.63	25.55	25.50	27.28	27.18	27.13	27.71	27.63	27.63	27.40	27.40	27.22	27.22	26.60	26.60	26.55	26.55	35.10	34.96	34.91	34.47	34.47
DESIGN SURFACE LEVEL	27.60	27.29	27.20		27.21	28.50	27.86	28.45	29.20	30.30	30.21	31.08	31.27	30.29	27.45	36.60	36.34	34.84										
ROAD CHAINAGE	266.11	—	19.00		275.69	47.61	50.23		400.00	619.65	647.39	772.00	1299.22	1306.94										
PIPE CHAINAGE	15.77	21.00	25.35		36.35	0.00	7.27	0.00	10.46	0.00	15.61	60.53	96.57	221.19	231.21	0.00	13.65	28.76										

LINE 54 LINE 80 LINE 82 LINE 90 LINE 26

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
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AZIMUTH:

DATUM:

ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

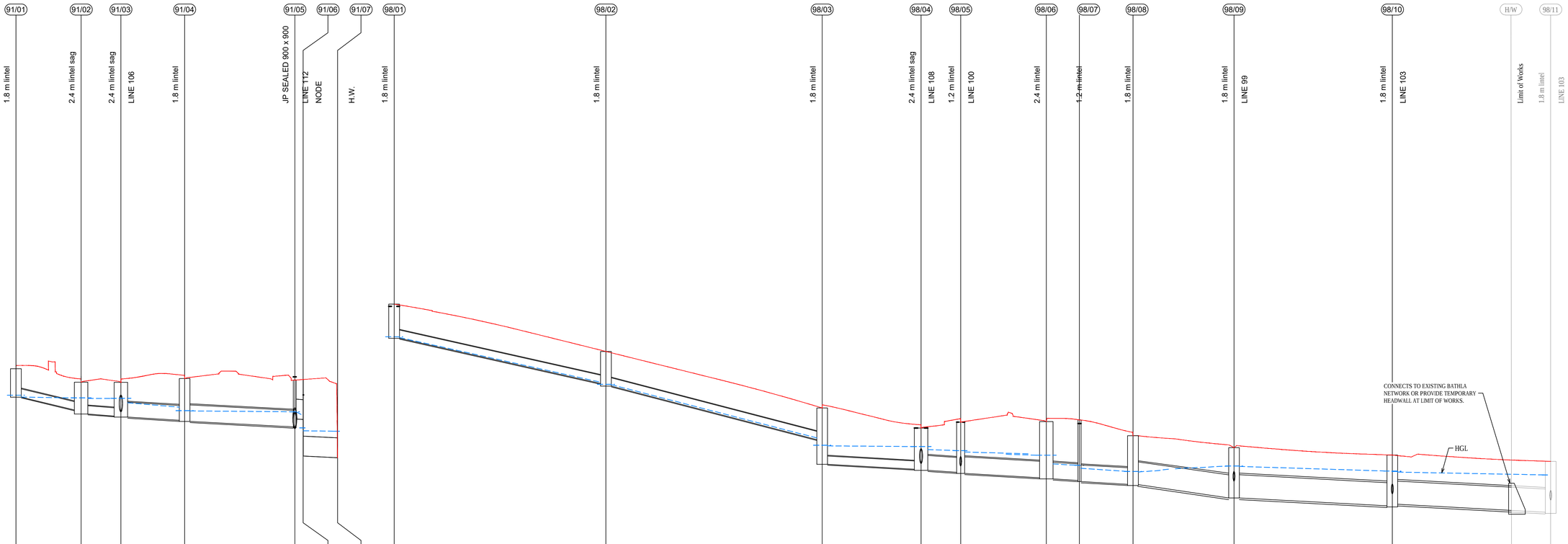
DRAINAGE PROFILES - LINE 26,LINE 54, LINE 80, LINE 82 & LINE 90

PLAN No: 110350-CC-514 I

FILE No: 110350-CC-514

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:58:09 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-514.dwg



DATUM (m)	22.00																													
PEAK FLOW (L/s)	30		69		933		913		1231		1232				19		40		69		646		854		888		893		975		1215		1373		1373
PIPE SIZE (mm)	375		375		675		750		2500x900		2200x900				375		375		375		675		750		750		750		1050		1050		1050		1050
PIPE CLASS	RRJ2		RRJ2		RRJ2		RRJ2		Box Culvert		Box Culvert				RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2
PIPE GRADE (%)	3.9		1.0		1.0		1.0		1.1		1.0				4.3		5.0		1.0		1.0		1.0		1.0		1.0		2.6		1.0		1.0		1.0
PIPE COVER MINIMUM	1.00		1.10		1.03		1.19		0.87						1.10		1.10		1.63		1.26		1.55		1.94		1.60		1.11		1.15		1.05		1.05
FULL PIPE VELOCITY (m/s)	1.29		0.88		2.67		2.46		1.89		1.14				1.59		2.27		0.78		1.90		1.93		2.04		2.23		1.38		1.40		1.59		1.59
HGL GRADE (%)	0.27		-0.07		1.38		0.15		8.62		0.23				4.22		4.93		0.14		0.47		0.49		0.8		1.21		-1.24		0.58		0.36		0.36
WAE																																			
HYDRAULIC GRADE LINE	29.30	29.26	29.23	29.24	29.04	28.84	28.67		28.63	28.47	27.77		27.75	36.99		34.97	34.86		32.44	32.09	32.06	31.92	31.87	31.81	31.66	31.27	31.21	31.07	30.93	31.17	31.16	30.95		31.06
INVERT LEVEL	29.29	28.71	28.53	28.44	28.39	28.24	28.19	27.94	28.30	28.28	26.63	26.55	26.55	36.96		34.91	34.79		32.37	31.25	31.03	30.98	30.89	30.84	30.64	30.59	30.52	30.47	30.35	30.29	29.72	29.73	29.37		29.37
DESIGN SURFACE LEVEL	30.58		29.97		29.97		30.13		30.07		30.09		27.45	38.51			36.36			33.80		32.89		33.16		33.19		33.26		32.55		32.00		31.67		31.67
ROAD CHAINAGE	741.05		19.31		19.33		770.75							133.68			85.68			36.68				1070.96		1068.42		1075.77		21.07		43.01				
PIPE CHAINAGE	0.00		14.78		23.78		38.23		63.22		65.08		72.90	0.00			48.00			97.00		119.42		128.39		147.80		155.29		167.44		190.34		226.23		226.23

LINE 91

LINE 98

H 1:500 (AT A1) — 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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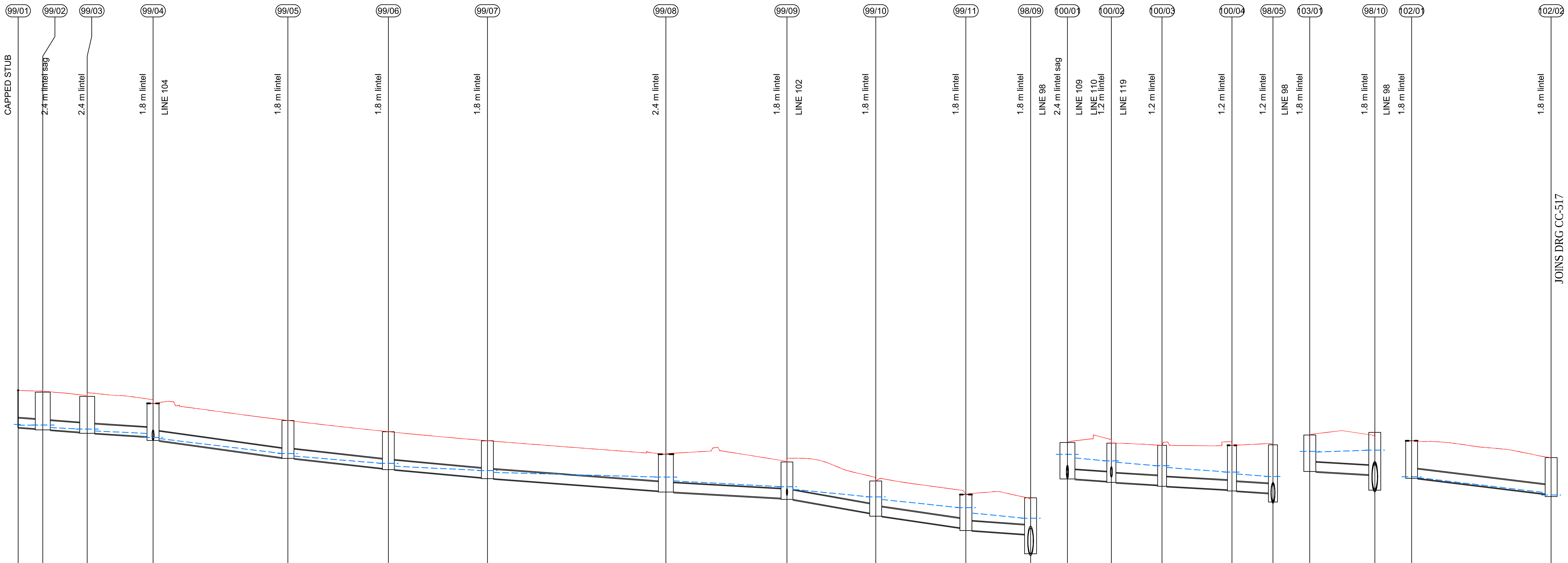
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

DRAINAGE PROFILES - LINE 91 & LINE 98

PLAN No: 110350-CC-515 H
FILE No: 110350-CC-515
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:58:20 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-515.dwg



LINE 99

DATUM (m) 27.00

	99/01–99/02	99/02–99/03	99/03–99/04	99/04–99/05	99/05–99/06	99/06–99/07	99/07–99/08	99/08–99/09	99/09–99/10	99/10–99/11	99/11–98/09
PEAK FLOW (L/s)	9	34	48	68	102	134	155	194	276	253	282
PIPE SIZE (mm)	375	375	375	375	375	375	375	375	375	375	375
PIPE CLASS	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2
PIPE GRADE (%)	1.0	1.0	1.0	2.5	2.0	1.6	1.4	1.0	3.1	2.5	1.2
PIPE COVER MINIMUM	1.10	1.11	1.13	1.10	1.10	1.10	1.10	1.13	1.10	1.10	1.10
FULL PIPE VELOCITY (m/s)	0.51	0.82	1.16	1.74	1.82	1.82	1.61	1.82	2.85	2.29	2.57
HGL GRADE (%)	-0.12	0.69	0.74	2.22	1.46	0.87	0.52	0.96	1.7	1.83	1.62

	99/01	99/02	99/03	99/04	99/05	99/06	99/07	99/08	99/09	99/10	99/11	98/09
WAE												
HYDRAULIC GRADE LINE	34.96	34.97 / 34.87	34.81 / 34.73	34.63 / 34.42	33.81 / 33.71	33.41 / 33.30	33.12 / 33.04	32.85 / 32.70	32.46 / 32.35	32.05 / 31.94	31.60 / 31.39	31.17 / 31.16
INVERT LEVEL	34.88	34.83 / 34.78	34.68 / 34.63	34.50 / 34.34	33.64 / 33.61	33.21 / 33.16	32.83 / 32.79	32.29 / 32.24	31.99 / 31.94	31.39 / 31.26	30.79 / 30.68	30.52 / 29.73
DESIGN SURFACE LEVEL	36.39	36.31	36.14	35.85	35.16	34.70	34.33	33.78	33.47	32.69	32.14	32.00
ROAD CHAINAGE	24.66	19.68	18.99	1232.38	1204.90	1184.43	1164.25	1127.90	1110.64	20.70	38.93	43.01
PIPE CHAINAGE	0.00	5.03	14.07	27.49	54.98	75.44	95.62	131.98	156.66	174.74	193.11	206.30

LINE 100

DATUM (m) 26.00

	100/01–100/02	100/02–100/03	100/03–100/04	100/04–98/05
PEAK FLOW (L/s)	220	232	238	245
PIPE SIZE (mm)	375	375	375	375
PIPE CLASS	RRJ2	RRJ2	RRJ2	RRJ2
PIPE GRADE (%)	1.0	1.0	1.0	1.0
PIPE COVER MINIMUM	1.15	1.19	1.26	1.46
FULL PIPE VELOCITY (m/s)	2.00	2.10	2.16	2.22
HGL GRADE (%)	1.35	1.38	1.32	1.26

	100/01	100/02	100/03	100/04	98/05
WAE					
HYDRAULIC GRADE LINE	32.63	32.51 / 32.45	32.31 / 32.24	32.06 / 31.98	31.87 / 31.81
INVERT LEVEL	31.77	31.68 / 31.63	31.53 / 31.48	31.34 / 31.29	31.20 / 30.84
DESIGN SURFACE LEVEL	33.26	33.24	33.14	33.15	33.16
ROAD CHAINAGE		19.14	17.71	1079.32	1070.96
PIPE CHAINAGE	0.00	8.96	19.29	33.52	41.88

LINE 103

DATUM (m) 24.00

	103/01–98/10
PEAK FLOW (L/s)	94
PIPE SIZE (mm)	375
PIPE CLASS	RRJ2
PIPE GRADE (%)	1.0
PIPE COVER MINIMUM	1.13
FULL PIPE VELOCITY (m/s)	0.85
HGL GRADE (%)	-0.57

	103/01	98/10
WAE		
HYDRAULIC GRADE LINE	30.87	30.95 / 30.93
INVERT LEVEL	30.08	29.95 / 29.32
DESIGN SURFACE LEVEL	31.56	31.67
ROAD CHAINAGE	67.30	
PIPE CHAINAGE	0.00	13.25

LINE 102

DATUM (m) 29.00

	102/01–102/02
PEAK FLOW (L/s)	11
PIPE SIZE (mm)	375
PIPE CLASS	RRJ2
PIPE GRADE (%)	2.2
PIPE COVER MINIMUM	1.10
FULL PIPE VELOCITY (m/s)	1.07
HGL GRADE (%)	2.16

	102/01	102/02
WAE		
HYDRAULIC GRADE LINE	34.83	34.22
INVERT LEVEL	34.80	34.17
DESIGN SURFACE LEVEL	36.33	35.64
ROAD CHAINAGE	1255.15	1226.82
PIPE CHAINAGE	0.00	28.43

H 1:500 (AT A1) — 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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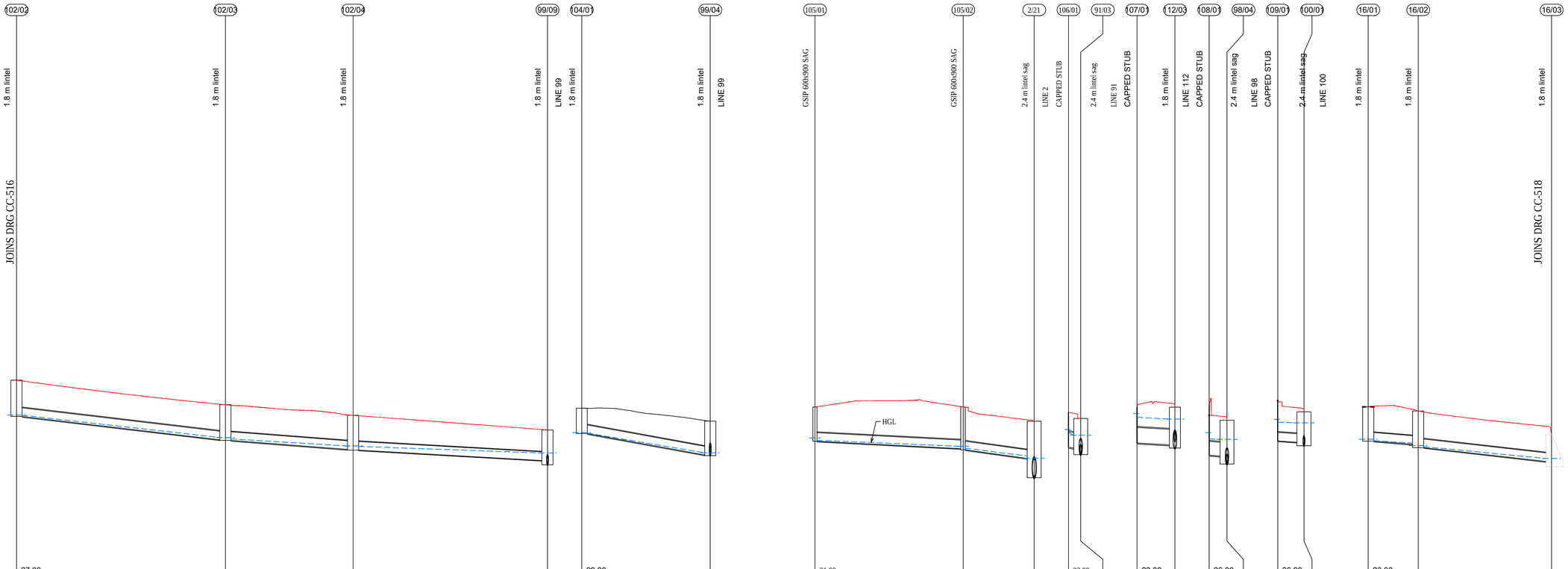
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

DRAINAGE PROFILES - LINE 99, LINE 100, LINE 102 & LINE 103

PLAN No: 110350-CC-516 H
FILE No: 110350-CC-516
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:58:31 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-516.dwg



	LINE 102			LINE 104		LINE 105			LINE 106		LINE 107		LINE 108		LINE 109		LINE 16		
DATUM (m)	27.00			29.00		21.00			23.00		23.00		26.00		26.00		23.00		
PEAK FLOW (L/s)	19	42	47	9		29	53		918		918		537		166		10	26	
PIPE SIZE (mm)	375	375	375	375		375	375		675		675		600		375		375	375	
PIPE CLASS	RRJ2	RRJ2	RRJ2	RRJ2		RRJ2	RRJ2		RRJ2		RRJ2		RRJ2		RRJ2		RRJ2	RRJ2	
PIPE GRADE (%)	2.2	1.4	1.1	3.3		1.0	2.4		1.5		1.0		1.0		1.0		1.3	2.1	
PIPE COVER MINIMUM	1.10	1.10	1.10	0.69		1.10	1.24		0.80		0.90		1.10		1.10		1.12	1.10	
FULL PIPE VELOCITY (m/s)	1.09	1.24	1.38	0.99		0.94	1.61		2.52		2.56		1.94		1.50		0.71	1.02	
HGL GRADE (%)	2.14	1.1	0.67	3.07		0.83	2.15		3.74		0.94		0.38		0.38		0.96	1.78	
WAE																			
HYDRAULIC GRADE LINE	34.22 34.11	33.13 33.07	32.77 32.74	32.46 32.35	35.33	34.46 34.42	27.02	26.75 26.66	26.33 26.15	29.34 29.24	29.04	30.02	29.94 29.60	32.07	32.06 31.92	32.80 32.78	32.63	28.99 28.89	28.73 28.22
INVERT LEVEL	34.17 34.06	33.04 33.01	32.62 32.59	32.13 31.94	35.31	34.37 34.34	26.97	26.65 26.60	26.22 25.38	28.71 28.67	28.39	28.90	28.81 28.67	31.36	31.33 30.98	31.99 31.93	31.77	28.98 28.83	28.69 28.09 28.09
DESIGN SURFACE LEVEL	35.64	34.57	34.11	33.47	36.42	35.85	28.47	28.48	27.85	30.24	29.97	30.46	30.46	33.57	32.89	33.71	33.26	30.48	30.29 29.60
ROAD CHAINAGE	1226.82	1181.11	1153.18	1110.64	1260.49	1232.38	314.74	15.97	28.72	22.01	19.33		826.05					27.86	34.23
PIPE CHAINAGE	28.43	74.15	102.09	144.63	0.00	28.11	0.00	32.45	47.98	0.00	2.67	0.00	8.29	0.00	3.90	0.00	5.74	0.00	10.93 40.13

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

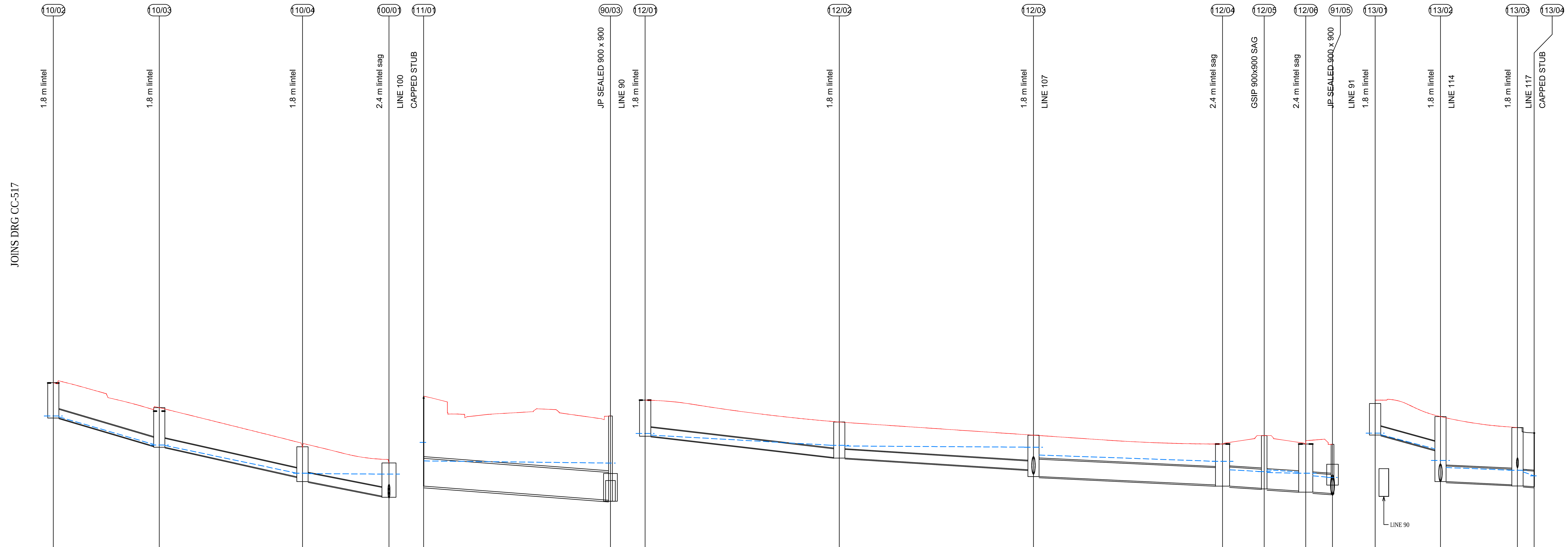
DRAINAGE PROFILES - LINE 102, 104, 105, 106, 107, 108 & 109

PLAN No: 110350-CC-517 I

FILE No: 110350-CC-517

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:58:42 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-517.dwg



LINE 110

DATUM (m): 28.00

	110/02 – 110/03	110/03 – 110/04	110/04 – 100/01
PEAK FLOW (L/s)	35	51	76
PIPE SIZE (mm)	375	375	375
PIPE CLASS	RRJ2	RRJ2	RRJ2
PIPE GRADE (%)	5.3	4.1	3.4
PIPE COVER MINIMUM	1.10	1.10	1.10
FULL PIPE VELOCITY (m/s)	2.08	2.21	1.08
HGL GRADE (%)	5.19	3.87	0.11

	110/02	110/03	110/04	100/01
WAE				
HYDRAULIC GRADE LINE	35.33 / 35.25	34.06 / 34.02	32.82 / 32.80	32.78 / 32.63
INVERT LEVEL	35.28 / 35.20	33.99 / 33.94	32.66 / 32.45	31.82 / 31.77
DESIGN SURFACE LEVEL	36.73	35.65	33.96	33.26
ROAD CHAINAGE	94.00	71.33	40.35	
PIPE CHAINAGE	40.36	63.27	94.25	112.97

LINE 111

DATUM (m): 23.00

	111/01 – 90/03
PEAK FLOW (L/s)	2055
PIPE SIZE (mm)	1200
PIPE CLASS	RRJ2
PIPE GRADE (%)	1.5
PIPE COVER MINIMUM	1.82
FULL PIPE VELOCITY (m/s)	1.82
HGL GRADE (%)	0.23

	111/01	90/03
WAE		
HYDRAULIC GRADE LINE	28.35	28.25 / 27.90
INVERT LEVEL	27.26	26.65 / 26.60
DESIGN SURFACE LEVEL	31.15	30.29
ROAD CHAINAGE	19.06	772.00
PIPE CHAINAGE	0.00	40.40

LINE 112

DATUM (m): 24.00

	112/01 – 112/02	112/02 – 112/03	112/03 – 112/04	112/04 – 112/05	112/05 – 112/06	112/06 – 91/05
PEAK FLOW (L/s)	49	114	987	1011	1014	1044
PIPE SIZE (mm)	375	375	750	825	825	825
PIPE CLASS	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2
PIPE GRADE (%)	2.2	1.2	0.9	1.0	1.0	1.0
PIPE COVER MINIMUM	1.10	1.10	0.90	1.02	1.23	1.23
FULL PIPE VELOCITY (m/s)	1.40	1.35	2.23	1.94	2.14	2.03
HGL GRADE (%)	1.06	0.12	0.67	0.79	0.31	1.24

	112/01	112/02	112/03	112/04	112/05	112/06	91/05
WAE							
HYDRAULIC GRADE LINE	30.46	30.02 / 29.99	29.94 / 29.60	29.33 / 28.96	28.89 / 28.84	28.82 / 28.70	28.63
INVERT LEVEL	30.42	29.50 / 29.47	28.97 / 28.67	28.30 / 28.25	28.16 / 28.13	28.04 / 27.99	27.94 / 28.30
DESIGN SURFACE LEVEL	31.98	31.03	30.46	30.08	30.44	30.08	30.07
ROAD CHAINAGE	910.05	868.05	826.05	785.15	785.10	785.10	
PIPE CHAINAGE	0.00	42.00	84.00	124.90	133.90	142.90	148.68

LINE 113

DATUM (m): 23.00

	113/01 – 113/02	113/02 – 113/03	113/03 – 113/04
PEAK FLOW (L/s)	19	736	763
PIPE SIZE (mm)	375	675	675
PIPE CLASS	RRJ2	RRJ2	RRJ2
PIPE GRADE (%)	4.6	0.8	1.0
PIPE COVER MINIMUM	1.10	1.77	1.60
FULL PIPE VELOCITY (m/s)	1.36	2.08	2.35
HGL GRADE (%)	4.36	0.72	4.78

	113/01	113/02	113/03	113/04
WAE				
HYDRAULIC GRADE LINE	29.49	28.87 / 28.06	27.94 / 27.87	27.70
INVERT LEVEL	29.47	28.82 / 27.45	27.31 / 27.26	27.23 / 27.23
DESIGN SURFACE LEVEL	30.83	30.27	29.79	29.55
ROAD CHAINAGE	728.05	19.54	37.36	40.00
PIPE CHAINAGE	0.00	14.13	30.79	34.41

H 1:500 (AT A1) — 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
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E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
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AZIMUTH:
DATUM:
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CLIENT: Stockland

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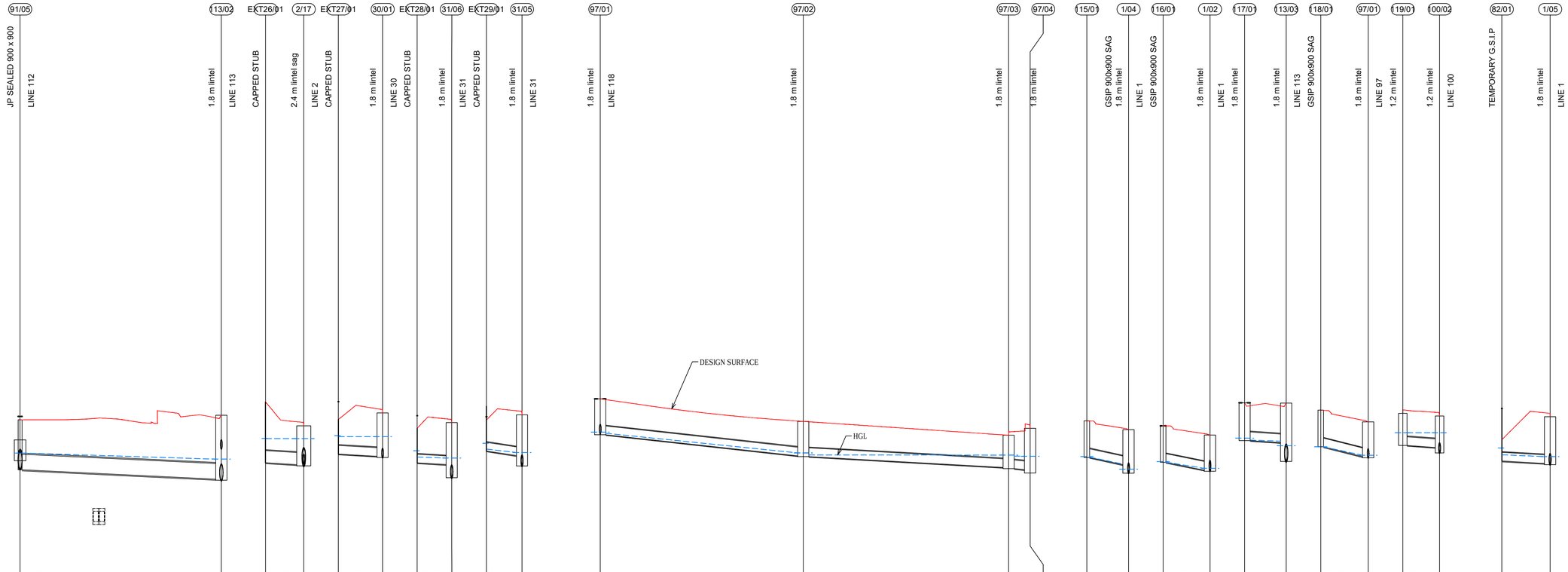
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

DRAINAGE PROFILES - LINE 110, 111, 112 & 113

PLAN No: 110350-CC-518 H
FILE No: 110350-CC-518
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 9:58:53 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-518.dwg



	LINE 114		LINE EXT26	LINE EXT27	LINE EXT28	LINE EXT29	LINE 97			LINE 115	LINE 116	LINE 117	LINE 118	LINE 119	LINE 82
DATUM (m)	23.00		21.00	21.00	22.00	22.00	24.00			23.00	24.00	22.00	25.00	26.00	22.00
PEAK FLOW (L/s)	707		40	56	102	77	38	59	78	4	4	11	0	20	126
PIPE SIZE (mm)	675		525	375	375	375	375	375	375	375	375	375	375	375	375
PIPE CLASS	RRJ2		RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2	RRJ2
PIPE GRADE (%)	0.9		1.0	1.0	1.0	2.6	2.1	1.1	1.0	3.5	3.3	1.0	4.1	1.1	1.0
PIPE COVER MINIMUM	1.44		1.29	1.10	1.10	1.10	1.00	1.00	1.19	1.10	1.10	1.10	1.10	1.10	0.82
FULL PIPE VELOCITY (m/s)	2.32		0.46	0.72	1.12	1.08	1.45	0.71	0.71	0.81	0.77	0.66	0.00	0.57	1.22
HGL GRADE (%)	0.61		0.01	0.01	0.57	1.94	1.93	0.02	0.17	3.32	2.66	0.57	3.56	0.01	0.78
WAE															
HYDRAULIC GRADE LINE	28.63	28.37 28.06	27.25 27.25	27.34 27.34 27.27	27.46 27.41 27.00	27.80 27.65 27.58	30.48	29.64 29.55	29.54 29.50 29.49	28.45 28.15 27.88	29.24 28.97 28.93	28.19 28.14 27.87	30.90 30.53 30.48	32.51 32.51 32.45	27.56 27.47 27.36
INVERT LEVEL	27.91	27.50 27.45	26.21 26.13 26.08	26.58 26.49 26.44	27.20 27.13 26.56	27.72 27.52 27.07	30.42	29.51 29.48	29.01 28.96 28.91 28.77	28.44 28.13 27.76	29.23 28.89 28.84	28.17 28.08 27.26	30.90 30.47 30.42	31.96 31.87 31.63	27.28 27.18 27.13
DESIGN SURFACE LEVEL	30.07	30.27	28.85 27.81	28.09 28.37	28.70 28.95	29.66 29.29	31.98	31.00	30.40 30.70	30.02 29.65	30.81 30.41	29.81 29.79	32.49 31.98	33.35 33.24	29.59 29.20
ROAD CHAINAGE		19.54	41.02		365.24	411.31	910.00	866.00	821.50	459.99 458.36	563.31 558.44	36.84 37.36	914.94 910.00	1103.14 19.14	400.00
PIPE CHAINAGE	0.00	43.62	0.00 8.29	0.00 9.59	0.00 7.48	0.00 7.72	0.00	44.00	88.50 93.17	0.00 9.03	0.00 10.15	0.00 9.01	0.00 10.27	0.00 7.98	0.00 10.46

H 1:500 (AT A1) — 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) — 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
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	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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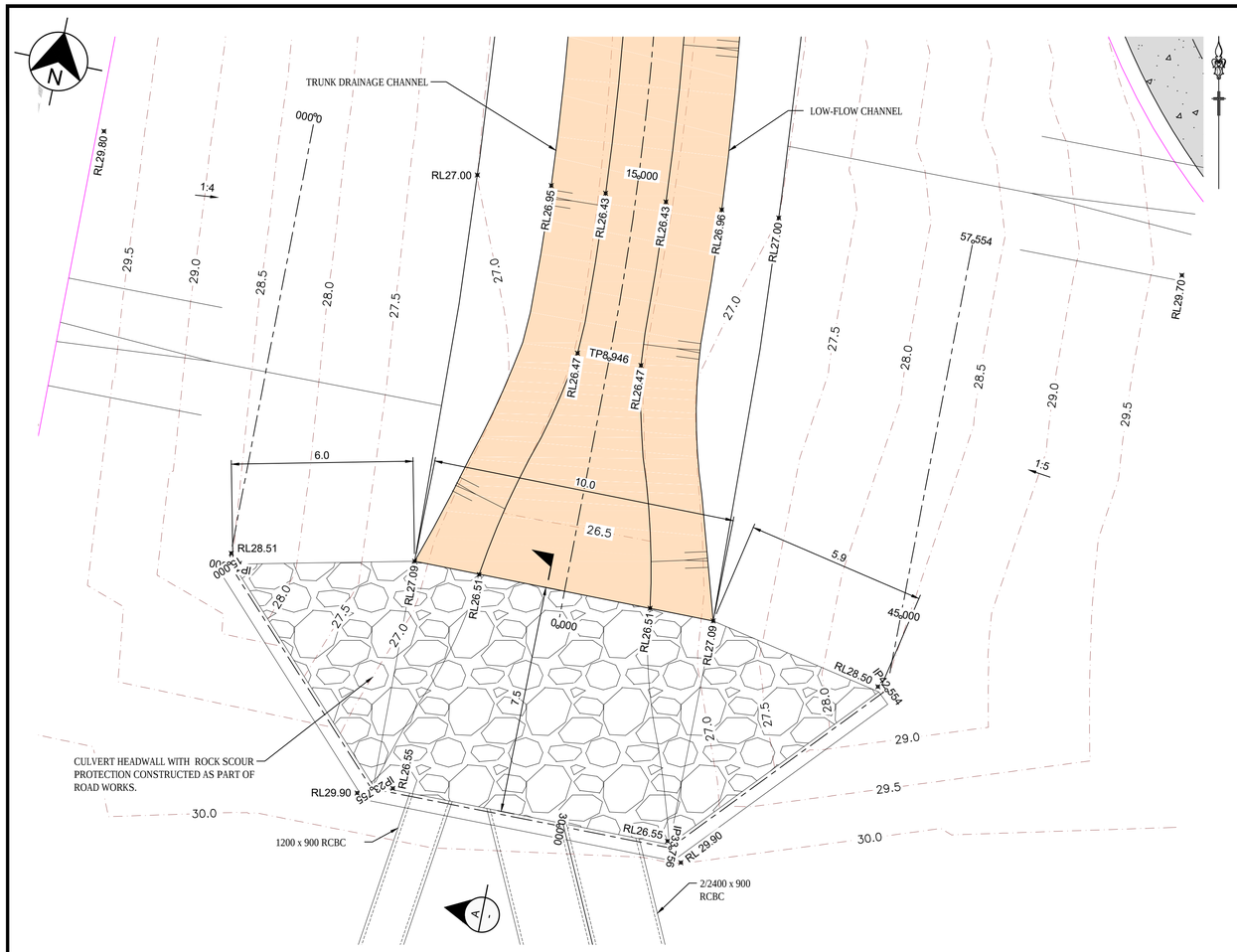
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

DRAINAGE PROFILES - LINE 82,97,114,115,116,117,118,119, EXT26, EXT27, EXT28 & EXT29

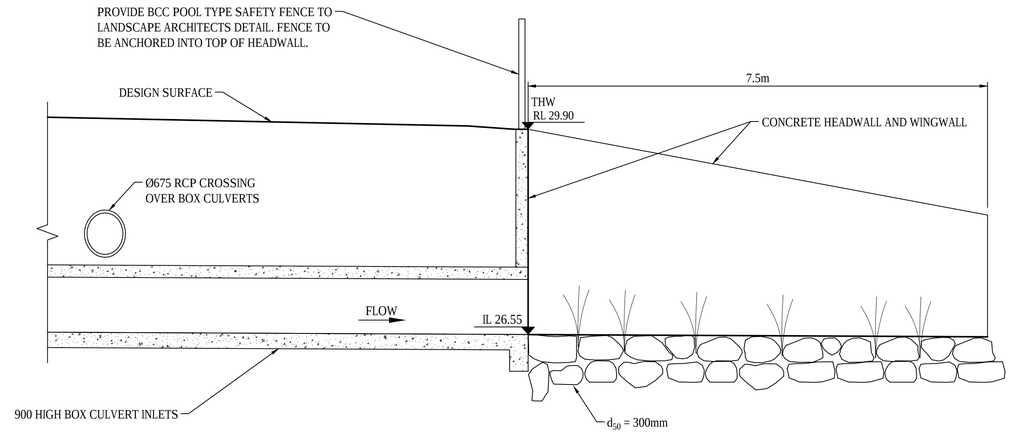
PLAN No: 110350-CC-519 I
FILE No: 110350-CC-519
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February 2019 9:59:04 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-519.dwg



TC07 OUTLET HEADWALL

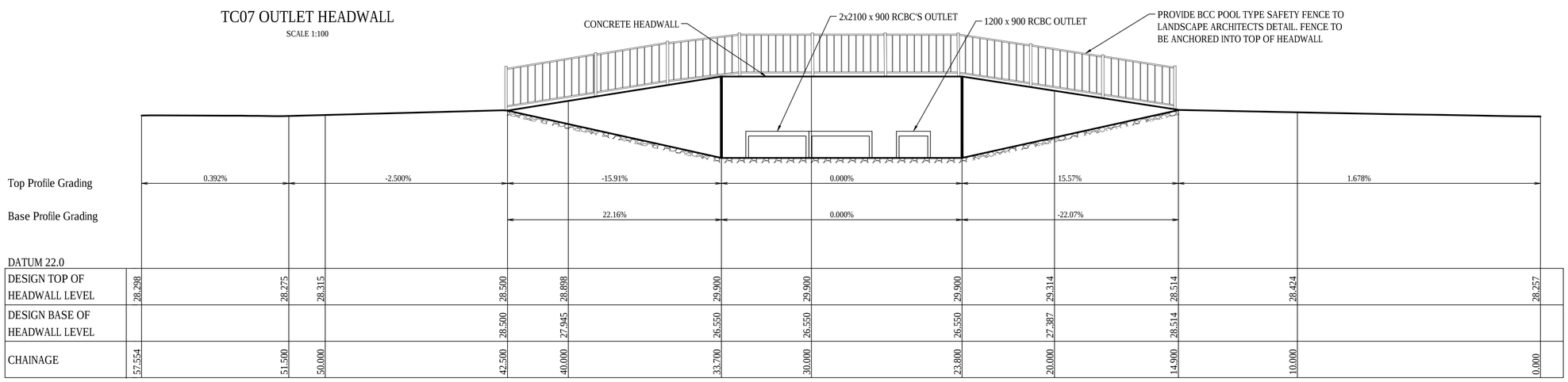
SCALE 1:100



SECTION A-A

1:50

TC07 HEADWALL			
CHAINAGE	EASTING	NORTHING	BEARING
0.00	298273.50	6268974.43	190° 54' 31.37"
15.00	298270.66	6268959.70	
23.76	298275.35	6268952.30	
33.76	298285.15	6268950.35	
42.55	298292.26	6268955.54	
57.55	298295.10	6268970.27	10° 54' 31.37"



LONGITUDINAL SECTION TC07 HEADWALL

HORIZONTAL SCALE 1:100
VERTICAL SCALE 1:100

1:50 (AT A1)
1:100 (AT A3)
1 0 1 2 3 4 5
METRES

1:100 (AT A1)
1:200 (AT A3)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

D	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
B	ISSUED FOR TENDER	M.J.P	J.A	R.O	P.M	7/02/19
A	ISSUED FOR REF APPROVAL	M.J.P	T.L.J			21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

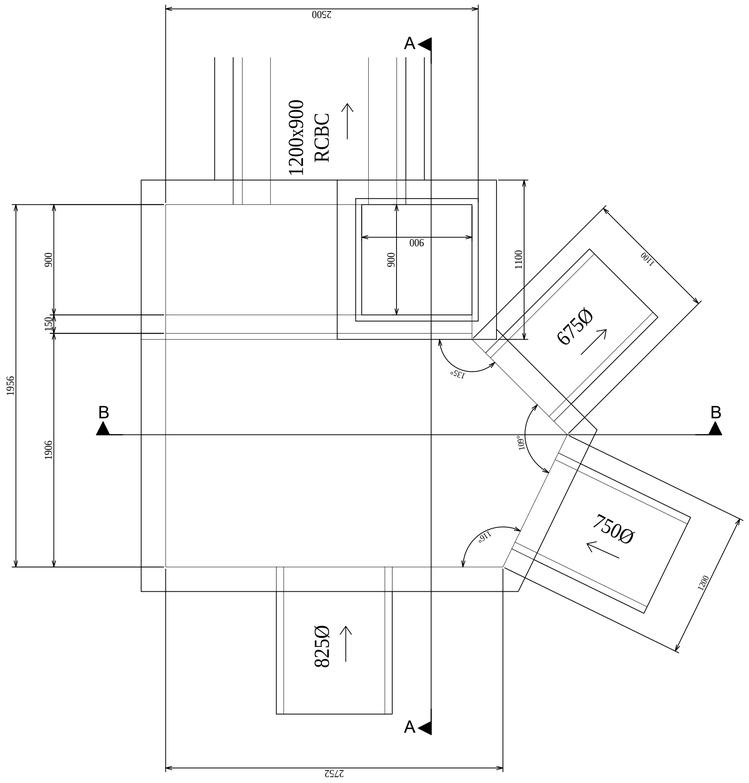
TC07 OUTLET HEADWALL

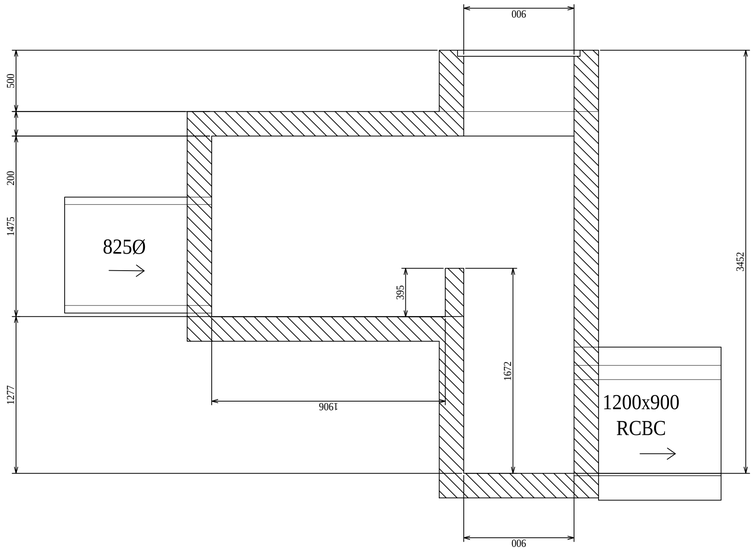
PLAN No: 110350-CC-520 D

FILE No: 110350-CC-520

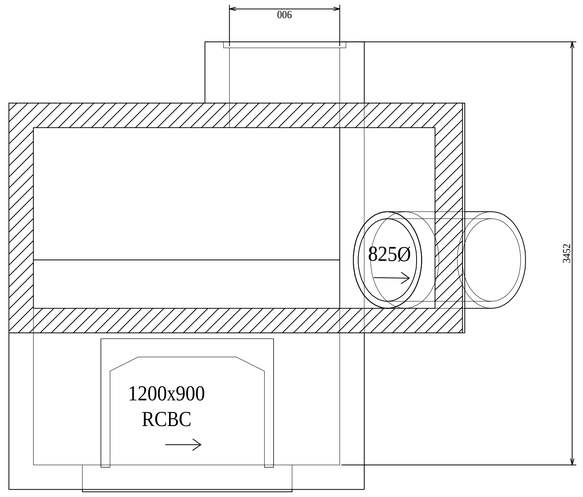
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:59:24 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-520.dwg





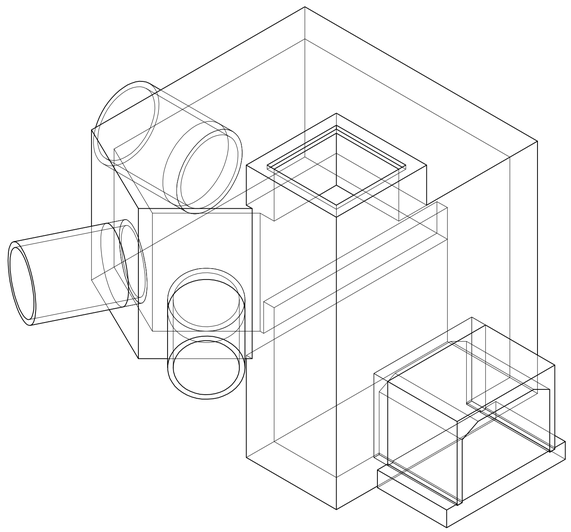
SECTION
A



SECTION
B

SPECIAL PIT DETAIL 91/05

N.T.S.



A	ISSUE FOR CONSTRUCTION APPROVAL	T.G	T.L.J	H.B	P.M	15/02/19
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

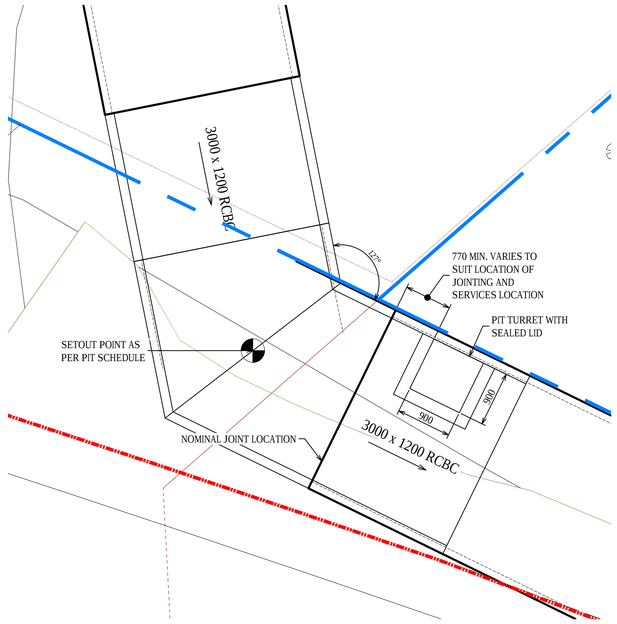
SPECIAL PIT DETAIL

PLAN No: 110350-CC-521 A
FILE No: 110350-CC-521
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:59:36 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-521.dwg

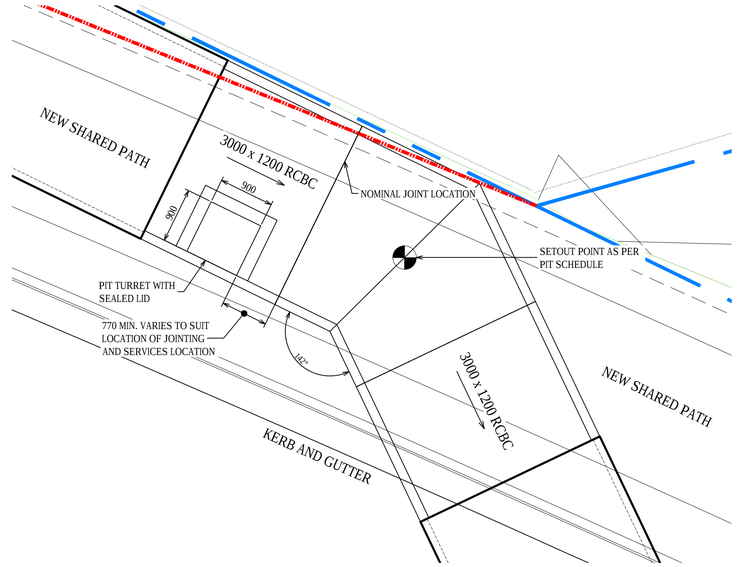
NOTES

1. REFER TO DRAWING 110350-CC-502 FOR LINE 90 PIT LOCATIONS



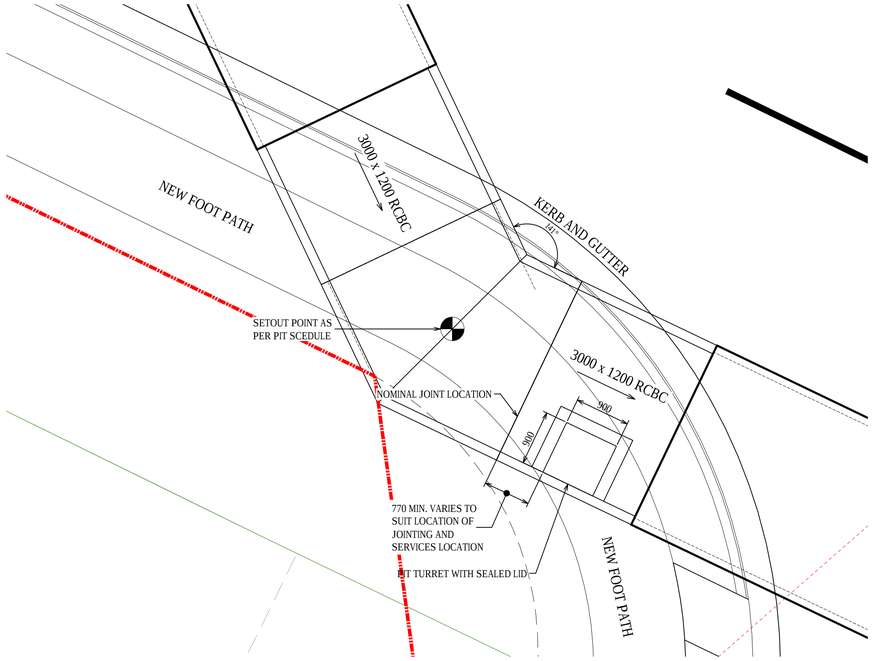
PIT 90/02

N.T.S



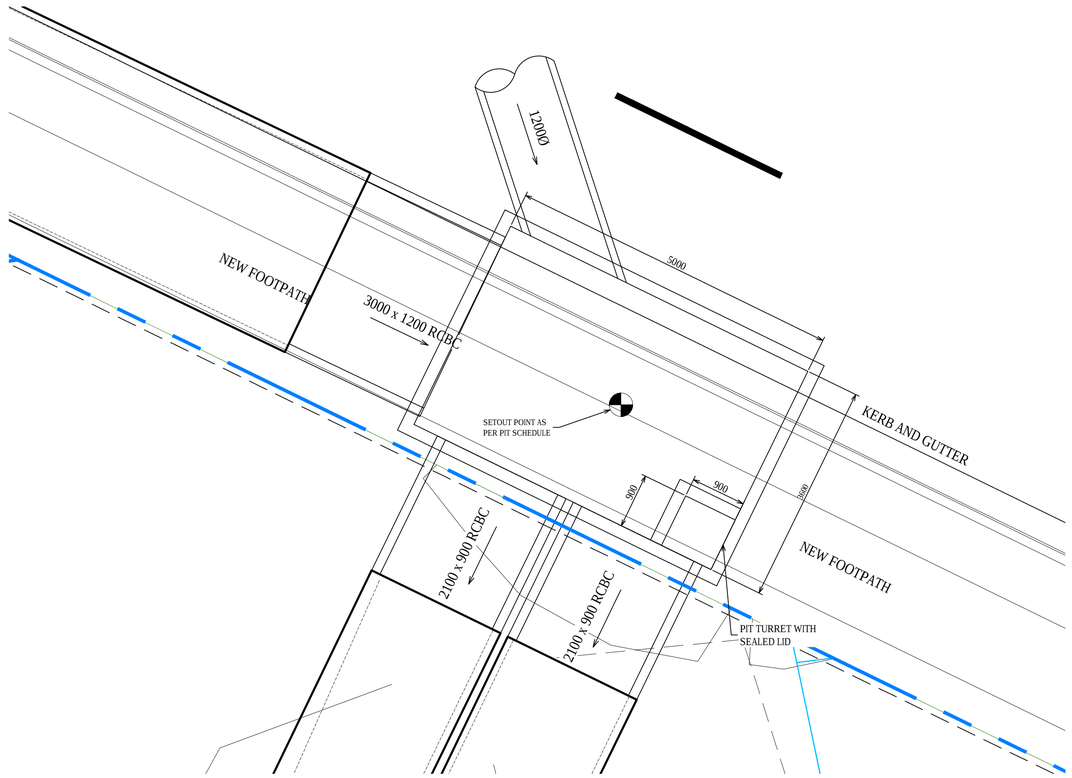
PIT 90/03

N.T.S



PIT 90/04

N.T.S



PIT 90/04

N.T.S

A	ISSUE FOR CONSTRUCTION APPROVAL	D.G	T.L.J	H.B	P.M	15/02/19
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:

DATUM:

ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

LINE 90 RCBC MITRE AND PIT DETAILS

PLAN No: 110350-CC-522 A

FILE No: 110350-CC-522

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 9:59:52 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-522.dwg

NOTES

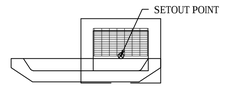
1. ALL TURRET LOCATIONS CAN VARY TO SUIT SERVICES/ VEHICULAR CROSSINGS
2. REFER INDICATIVE LOCATION ON DRAWING 110350-CC-522

PIT SCHEDULE

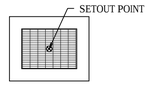
PIT NAME (-)	PIT TYPE (-)	PIT EASTING (m)	PIT NORTHING (m)	PIT DEPTH (m)	COMMENTS
1/01	1.8 m lintel	298443.01	6268974.73	1.37	
1/02	1.8 m lintel	298490.03	6268990.43	1.57	
1/03	1.8 m lintel	298537.63	6269012.36	1.74	
1/04	1.8 m lintel	298576.95	6269035.77	1.89	
1/05	1.8 m lintel	298623.39	6269070.03	2.07	
1/06	1.8 m lintel	298654.99	6269094.66	2.6	
1/07	1.8 m lintel	298666.64	6269112.01	2.51	
1/08	1.8 m lintel	298670.13	6269132	2.37	
1/09	1.8 m lintel	298664.43	6269153.47	2.36	
1/10	1.8 m lintel	298671.8	6269160	2.64	
1/11	1.8 m lintel	298644.11	6269195.9	2.62	
2/16	1.8 m lintel	298741.09	6269051	2.14	
2/17	2.4 m lintel sag	298717.04	6269079.23	1.73	
2/18	2.4 m lintel sag	298728.39	6269089.87	1.78	
2/19	1.2 m lintel	298729.98	6269122.76	2.32	
2/20	1.2 m lintel	298711.67	6269145.5	2.51	
2/21	2.4 m lintel sag	298691.14	6269147.27	2.47	
3/17	1.8 m lintel	298802.56	6269157.68	2.2	
3/18	2.4 m lintel sag	298794.89	6269167.67	2.04	
3/19	1.8 m lintel	298781.37	6269169.77	2.66	
3/20	1.8 m lintel	298769.93	6269187.83	2.81	
3/21	1.8 m lintel	298768.2	6269202.47	2.55	
6/01	1.8 m lintel	298905.94	6269309.04	1.36	
6/02	1.8 m lintel	298889.39	6269293.08	1.53	
6/03	1.8 m lintel	298870.06	6269276.38	1.7	
6/04	1.8 m lintel	298852.72	6269260.12	1.87	
6/05	1.8 m lintel	298833.78	6269245.38	1.99	
6/06	1.8 m lintel	298815.25	6269230.68	2.11	
6/07	1.8 m lintel	298790.7	6269208.42	2.33	
6/08	1.8 m lintel	298776.86	6269209.25	2.28	
10/01	1.8 m lintel	298917	6269270.63	1.51	
10/02	1.8 m lintel	298894.82	6269256.23	1.71	
10/03	1.8 m lintel	298867.78	6269236.99	1.91	
10/04	1.8 m lintel	298840.21	6269215.54	2.09	
10/05	1.8 m lintel	298813.06	6269194.43	2.29	
10/06	GSIP 900x900 SAG	298801.86	6269201.95	2.66	
16/01	1.8 m lintel	298397.08	6268981.64	1.5	
16/02	1.8 m lintel	298389.31	6268989.32	1.6	
26/01	1.8 m lintel	297769.87	6268829.89	1.5	EXISTING PIT
26/02	1.8 m lintel	297762.49	6268818.4	1.43	EXISTING PIT
26/03	H.W. STACKED ROCK	297752.76	6268806.85	0.38	EXISTING HEADWALL
29/01	1.8 m lintel	298756.67	6269150.56	1.45	
29/02	GSIP 900x900 SAG	298745.94	6269153.5	2.02	
29/03	1.8 m lintel	298735.07	6269156.48	1.89	
30/01	1.8 m lintel	298693.35	6269087.56	1.93	
31/01	1.8 m lintel	298449.25	6268957.78	1.51	
31/02	1.8 m lintel	298496.11	6268973.48	1.69	
31/03	1.8 m lintel	298543.36	6268995.03	1.87	
31/04	1.8 m lintel	298583.97	6269018.84	2.04	
31/05	1.8 m lintel	298625.38	6269048.87	2.22	
31/06	1.8 m lintel	298661.94	6269076.91	2.39	
31/07	GSIP 900x900 SAG	298658.51	6269085.66	2.85	
54/02	1.8 m lintel	298809.45	6269166.77	2.03	PROVIDE AS CAPPED STUB
54/03	2.4 m lintel sag	298803.62	6269174.37	1.84	
80/01	CAPPED STUB	298660.36	6269147.45	2.87	
82/01	CAPPED STUB	298613.4	6269073.11	2.31	
90/01	CAPPED STUB	298493.77	6268950.78	2.59	HEADWALL INLET
90/02	CULVERT MITRE AND TURRET	298481.98	6268961.01	2.58	
90/03	CULVERT MITRE AND TURRET	298438.01	6268951.82	3.67	
90/04	CULVERT MITRE AND TURRET	298405.79	6268967.99	4.04	
90/04A	900 x 900 TURRET				REFER DRAWING 110350-CC-522 FOR DETAILS
90/05	CULVERT MITRE AND TURRET	298284.04	6268941.42	3.69	
90/06	H.W.	298281.62	6268951.14	0.9	
91/01	1.8 m lintel	298318.28	6268929.22	1.29	
91/02	2.4 m lintel sag	298310.02	6268916.96	1.44	
91/03	2.4 m lintel sag	298301.22	6268915.08	1.58	
91/04	1.8 m lintel	298289.22	6268923.12	1.94	

PIT SCHEDULE

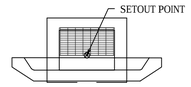
PIT NAME (-)	PIT TYPE (-)	PIT EASTING (m)	PIT NORTHING (m)	PIT DEPTH (m)	COMMENTS
91/05	SPECIAL PIT	298274.01	6268942.95	3.46	
91/07	H.W.	298277.31	6268952.04	0.9	
97/01	1.8 m lintel	298149.19	6268912.1	1.55	
97/02	1.8 m lintel	298192.25	6268921.14	1.52	
97/03	1.8 m lintel	298235.8	6268930.29	1.44	
97/04	1.8 m lintel	298237.05	6268934.79	1.94	EXISTING PIT
98/01	1.8 m lintel	298002.47	6268735.16	1.55	
98/02	1.8 m lintel	297995.34	6268782.62	1.57	
98/03	1.8 m lintel	297988.06	6268831.08	2.55	
98/04	2.4 m lintel sag	297997.51	6268851.41	1.92	
98/05	1.2 m lintel	297995.67	6268860.19	2.33	
98/06	2.4 m lintel	297994.15	6268879.53	2.59	
98/07	JP SEALED 900 x 900	297986.66	6268879.42	2.79	
98/08	1.8 m lintel	297978.06	6268888	2.26	
98/09	1.8 m lintel	297973.5	6268909.51	2.28	EXISTING PIT
98/10	1.8 m lintel	297968.03	6268944.98	2.35	EXISTING PIT
99/01	CAPPED STUB	297821.95	6268810	1.51	
99/02	2.4 m lintel sag	297820.91	6268814.92	1.54	
99/03	2.4 m lintel	297829.86	6268816.14	1.51	
99/04	1.8 m lintel	297837.69	6268827.05	1.51	
99/05	BUTTERFLY GRATE 900 x 600	297864.57	6268832.79	1.55	
99/06	BUTTERFLY GRATE 900 x 600	297884.59	6268837.02	1.54	
99/07	BUTTERFLY GRATE 900 x 600	297904.33	6268841.2	1.54	
99/08	2.4 m lintel	297939.89	6268848.74	1.55	
99/09	1.8 m lintel	297953.1	6268869.59	1.53	
99/10	1.8 m lintel	297962.15	6268885.24	1.43	
99/11	1.8 m lintel	297961.71	6268903.61	1.47	
100/01	2.4 m lintel sag	297959.52	6268841.21	1.49	
100/02	1.2 m lintel	297967.28	6268845.7	1.6	
100/03	1.2 m lintel	297977.18	6268848.63	1.67	
100/04	1.2 m lintel	297987.5	6268858.43	1.86	
102/01	1.8 m lintel	297812.09	6268837.43	1.53	
102/02	1.8 m lintel	297839.8	6268843.8	1.59	
102/03	1.8 m lintel	297884.37	6268853.95	1.56	
102/04	1.8 m lintel	297911.98	6268860.23	1.52	
104/01	1.8 m lintel	297810.23	6268821.04	1.11	
105/01	GSIP 600x900 SAG	298712.07	6269106.36	1.5	
105/02	GSIP 600x900 SAG	298691.87	6269131.75	1.88	
106/01	CAPPED STUB	298301.77	6268912.47	1.52	
107/01	CAPPED STUB	298234.13	6268903.52	1.56	
108/01	CAPPED STUB	298000.56	6268848.97	2.2	
109/01	CAPPED STUB	297954.08	6268839.37	1.72	
110/01	1.8 m lintel	297984.9	6268731.83	1.55	
110/02	1.8 m lintel	297978.9	6268771.74	1.53	
110/03	1.8 m lintel	297972.21	6268793.66	1.71	
110/04	1.8 m lintel	297967.5	6268824.28	1.51	
111/01	CAPPED STUB	298317.5	6268918.78	3.89	
112/01	1.8 m lintel	298152.89	6268894.45	1.56	
112/02	1.8 m lintel	298193.99	6268903.12	1.56	
112/03	1.8 m lintel	298235.09	6268911.75	1.79	
112/04	2.4 m lintel sag	298275.12	6268920.16	1.82	
112/05	GSIP 900x900 SAG	298273.27	6268928.97	2.31	
112/06	2.4 m lintel sag	298271.42	6268937.77	2.08	
113/01	1.8 m lintel	298327.25	6268949.5	1.36	
113/02	1.8 m lintel	298315.29	6268957.03	2.81	
113/03	1.8 m lintel	298317.08	6268973.59	2.53	
113/04	CAPPED STUB	298317.74	6268977.14	2.33	
115/01	GSIP 900x900 SAG	298580.49	6269027.46	1.59	
116/01	GSIP 900x900 SAG	298488.78	6268980.36	1.58	
117/01	1.8 m lintel	298308.14	6268974.79	1.64	
118/01	GSIP 900x900 SAG	298146.2	6268902.27	1.59	
119/01	1.2 m lintel	297964.23	6268853.07	1.39	
EXT26/01	CAPPED STUB	298710.37	6269074.32	2.64	
EXT27/01	CAPPED STUB	298687.22	6269080.19	1.5	
EXT28/01	CAPPED STUB	298662.93	6269069.49	1.5	
EXT29/01	CAPPED STUB	298626.04	6269041.18	1.94	



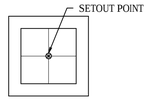
SETOUT DETAIL FOR KERB INLET PIT (LINTEL)
SCALE 1:25



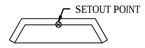
SETOUT DETAIL FOR GRATED SURFACE INLET PIT WITH FLAT GRATE (GSIP)
SCALE 1:25



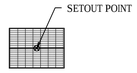
SETOUT DETAIL FOR KERB INLET PIT (SAG)
SCALE 1:25



SETOUT DETAIL FOR JUCTION PIT
SCALE 1:25



SETOUT DETAIL FOR HEADWALL
SCALE 1:25



SETOUT DETAIL FOR GRATED SURFACE INLET PIT (GSIP) WITH BUTTERFLY GRATE
SCALE 1:25

1:25(AT A1)

500 0 500 1000 1500 2000 2500
MILLIMETRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	20/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

DRAINAGE PIT SCHEDULE

PLAN No: 110350-CC-525 I
FILE No: 110350-CC-525
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:00:00 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-525.dwg

DESIGN STORM 1:10yr ARI HYDROLOGIC RESULTS

PIT NAME (-)	PIT TYPE (-)	CATCHMENT AREA (Ha)	PERCENT IMPERVIOUS (%)	CRITICAL STORM (min)	APPROACH FLOW (L/s)	CAPTURED FLOW (L/s)	UNCAPTURED FLOW (L/s)	GRATE DEPTH (mm)	ROAD GRADE (%)	ROAD CROSSFALL (%)	BYPASS PIT (-)	BYPASS CHANNEL FLOW (L/s)	U/S FLOW WIDTH (m)	U/S VxD (m/s^2)	D/S FLOW WIDTH (m)	D/S VxD (m/s^2)	COMMENTS (-)
1/01	1.8 m lintel		0	15	17	17	0	69	0.8	3	1/02	18	1.45	0.03	1.63	0.03	
1/02	1.8 m lintel	0.062	95	15	19	19	0	75	0.8	3	1/03	24	1.63	0.04	1.63	0.04	
1/03	1.8 m lintel	0.066	95	15	24	23	1	68	0.8	3	1/04	17	1.4	0.03	1.56	0.03	
1/04	1.8 m lintel	0.057	95	25	17	17	0	73	0.8	3	1/05	22	1.56	0.04	1.55	0.04	
1/05	1.8 m lintel	0.072	95	15	26	25	1	69	0.8	3	1/06	18	1.43	0.03	1.43	0.03	
1/06	1.8 m lintel	0.05	95	15	18	18	0	52	1	3	1/07	11	0.86	0.03	1.01	0.03	
1/07	1.8 m lintel	0.029	95	15	11	11	0	56	2.2	1	1/08	15	1.01	0.04	1.01	0.04	
1/08	1.8 m lintel	0.041	85	5	15	15	0	52	1.7	1	1/09	9	0.87	0.03	1.11	0.02	
1/09	1.8 m lintel	0.032	95	15	12	12	0	59	1	2.4	25/01	13	1.11	0.03	1.13	0.03	
1/10	1.8 m lintel	0.008	95	15	0	0	0	58	0.8	2.9	1/11	15	1.08	0.03	1.08	0.03	
1/11	1.8 m lintel	0.04	95	15	13	13	0	58	1.1	3	1/12	13	1.08	0.03	1.08	0.03	
2/16	1.8 m lintel	0.046	95	15	17	17	0	61	2	3	2/17	19	1.16	0.04	1.16	0.04	
2/17	2.4 m lintel sag	0.099	95	15	37	44	0	51	0.5	2.8	2/18	0	0	0	0	0	
2/18	2.4 m lintel sag	0.134	95	5	36	38	0	47	0.5	3	2/19	0	0.28	0.01	1.36	0	
2/19	1.2 m lintel	0.014	95	15	0	0	0	67	0.5		29/01	15	1.36	0.03	1.36	0.03	
2/20	1.2 m lintel	0.018	95	25	7	7	0	65	0.5		2/21	16	1.3	0.03	1.3	0.03	
2/21	2.4 m lintel sag	0.075	95	5	22	25	0	37	0.5	1.5	1/10	0	0.43	0	1.08	0.02	
3/17	1.8 m lintel	0.045	95	15	17	17	0	39	3	3	3/18	6	0.45	0.03	0.45	0.03	
3/18	2.4 m lintel sag	0.039	95	5	14	19	0	31	0.5	2.7	54/03	0	0	0	0	0	
3/19	1.8 m lintel	0.04	85	5	14	14	0	43	0.4	3	3/18	8	0.57	0.03	0.57	0.03	
3/20	1.8 m lintel	0.068	85	15	25	24	0	51	0.8	3	3/21	13	0.83	0.04	0.83	0.04	
3/21	1.8 m lintel	0.033	95	5	13	13	0	0	3	1.7	LOST	0	0	0	0	0	
6/01	1.8 m lintel		0	15	21	20	1	84	0.7	1.1	6/02	28	1.94	0.04	1.92	0.04	
6/02	1.8 m lintel	0.071	95	15	28	26	2	83	0.7	2.9	6/03	28	1.92	0.04	1.79	0.04	
6/03	1.8 m lintel	0.07	95	25	28	26	2	80	0.5	2.7	6/04	23	1.79	0.03	1.65	0.04	
6/04	1.8 m lintel	0.059	95	15	23	23	0	75	0.5	3	6/05	22	1.65	0.04	1.59	0.04	
6/05	1.8 m lintel	0.058	95	25	22	22	0	73	0.7	3	6/06	21	1.59	0.04	1.95	0.03	
6/06	1.8 m lintel	0.056	95	25	21	21	0	84	0.6	3	6/07	27	1.95	0.04	1.74	0.04	
6/07	1.8 m lintel	0.074	95	5	27	24	3	46	0.5	3	6/08	7	0.67	0.03	0.93	0.03	
6/08	1.8 m lintel	0.043	95	15	7	7	0	54	0.8	1.9	23/01	8	0.93	0.02	1.06	0.02	
10/01	1.8 m lintel		0	15	17	17	0	69	0.6	3	10/02	14	1.45	0.03	1.4	0.03	
10/02	1.8 m lintel	0.037	95	25	14	14	0	68	0.4	3	10/03	15	1.4	0.03	1.42	0.03	
10/03	1.8 m lintel	0.041	95	15	15	15	0	69	0.6	3	10/04	15	1.42	0.03	1.48	0.03	
10/04	1.8 m lintel	0.041	95	15	15	15	0	70	0.6	3	10/05	16	1.48	0.03	1.31	0.03	
10/05	1.8 m lintel	0.042	95	5	16	16	0	51	0.6	3	54/03	10	0.82	0.03	0.82	0.03	
10/06	GSIP 900x900 SAG		0	5	0	0	0	0									
16/01	1.8 m lintel		0	5	10	10	0	0	3.3	2.9	LOST	0	0	0	0	0	
16/02	1.8 m lintel		0	5	16	16	0	0	2.9	3	LOST	0	0	0	0	0	
26/01	1.8 m lintel		0	5	6	6	0	0	1.2	3	LOST	0	0	0	0	0	EXISTING PIT
26/02	1.8 m lintel		0	5	9	9	0	0	1.6	3	LOST	0	0	0	0	0	EXISTING PIT
26/03	H.W. STACKED ROCK			5	0	0	0	0									EXISTING HEADWALL
29/01	1.8 m lintel	0.041	95	15	14	14	0	67	0.9	3	3/19	14	1.36	0.03	1.26	0.03	
29/02	GSIP 900x900 SAG		0	5	0	0	0	0									
29/03	1.8 m lintel	0.024	95	25	9	9	0	73	1.1	3	3/20	25	1.58	0.04	1.58	0.04	
30/01	1.8 m lintel	0.049	95	25	19	18	1	54	2.6		2/17	14	0.94	0.04	0.94	0.04	
31/01	1.8 m lintel		0	25	39	36	3	76	0.7	3	31/02	25	1.68	0.04	1.69	0.04	
31/02	1.8 m lintel	0.068	85	15	25	25	1	77	0.7	3	31/03	25	1.69	0.04	1.68	0.04	
31/03	1.8 m lintel	0.07	85	25	25	25	1	74	0.7	3	31/04	23	1.61	0.04	1.59	0.04	
31/04	1.8 m lintel	0.063	85	25	23	23	0	72	0.7	3	31/05	21	1.54	0.04	1.52	0.04	
31/05	1.8 m lintel	0.069	85	25	26	24	1	70	0.8	3	31/06	19	1.46	0.03	1.45	0.03	
31/06	1.8 m lintel	0.062	95	15	22	21	0	57	0.8	3	30/01	14	1.04	0.04	1.04	0.04	
31/07	GSIP 900x900 SAG		0	5	0	0	0	0									
54/02	1.8 m lintel	0.024	95	5	9	9	0	30	3	3	54/03	4	0.34	0.02	0.43	0.02	PROVIDE AS CAPPED STUB
54/03	2.4 m lintel sag	0.049	95	15	14	25	0	37	47.4	2.7	6/08	0	0	0	0	0	
80/01	CAPPED STUB	0.253	85	25	96	96	0	25		-24.7	1/09	3	0.29	0.02	1.11	0.01	
82/01	CAPPED STUB	0.404	10	25	126	126	0	32			1/05	4	0.37	0.02	1.43	0.01	
90/01	CAPPED STUB	33.048	42	120	6076	6076	0	490			EXT26/01	44	2.13	0.05	2.13	0.05	HEADWALL INLET
90/02	JP SEALED 900 x 900		0	5	0	0	0	0									
90/03	JP SEALED 900 x 900		0	5	0	0	0	0									
90/04	JP SEALED 900 x 900		0	5	0	0	0	0									
90/05	JP SEALED 900 x 900		0	5	0	0	0	0	0.8								
90/06	H.W.			5	0	0	0	0									
91/01	1.8 m lintel		0	15	30	29	1	48	1.9	3	91/02	12	0.73	0.04	0.73	0.04	
91/02	2.4 m lintel sag	0.044	95	5	17	27	0	40	1.9	2.3	91/03	0	0	0	0	0	
91/03	2.4 m lintel sag	0.035	95	5	3	6	0	14	0.7	2.6	91/04	0	0.13	0	0.79	0	
91/04	1.8 m lintel	0.007	95	5	0	0	0	50	0.8	3	112/04	4	0.79	0.01	0.5	0.02	
91/05	JP SEALED 900 x 900		0	5	0	0	0	0									
91/06	NODE		0	5	0	0	0	0									
91/07	H.W.			5	0	0	0	0									
97/01	1.8 m lintel		0	25	41	38	3	63	2.9	3	97/02	22	1.22	0.05	1.3	0.05	
97/02	1.8 m lintel	0.055	85	25	22	22	0	65	1.4	3	97/03	20	1.3	0.04	1.65	0.03	
97/03	1.8 m lintel	0.056	85	25	20	20	0	75	1.4	3	112/06	26	1.65	0.04	1.65	0.04	
97/04	1.8 m lintel			5	0	0	0	0									EXISTING PIT

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	20/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

HYDROLOGIC TABLE (SHEET 1 OF 2)

PLAN No: 110350-CC-526 I
FILE No: 110350-CC-526
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:00:09 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-526.dwg

DESIGN STORM 1:10yr ARI HYDROLOGIC RESULTS

PIT NAME	PIT TYPE	CATCHMENT AREA	PERCENT IMPERVIOUS	CRITICAL STORM	APPROACH FLOW	CAPTURED FLOW	UNCAPTURED FLOW	GRATE DEPTH	ROAD GRADE	ROAD CROSSFALL	BYPASS PIT	BYPASS CHANNEL FLOW	U/S FLOW WIDTH	U/S VxD	D/S FLOW WIDTH	D/S VxD	COMMENTS
98/01	1.8 m lintel		0	15	20	19	1	56		3	98/02	21	1	0.06	1	0.06	
98/02	1.8 m lintel	0.056	95	15	21	21	0	55	5	3	98/03	23	0.97	0.06	0.97	0.06	
98/03	1.8 m lintel	0.061	95	25	23	22	0	50	5.9	3	98/04	14	0.8	0.05	1.29	0.03	
98/04	2.4 m lintel sag	0.181	95	5	80	68	11	65	0.6		98/08	15	1.29	0.03	1.55	0.03	
98/05	1.2 m lintel	0.019	95	5	7	7	0	0	0.4								
98/06	2.4 m lintel		0	5	29	29	0	28	0.6	3	98/08	3	0.32	0.02	1.55	0	
98/07	JP SEALED 900 x 900	0.011	95	5	4	4	0	0	2.3								
98/08	1.8 m lintel	0.022	95	25	18	18	0	73	4	4	98/09	40	1.55	0.07	1.55	0.07	
98/09	1.8 m lintel	0.11	85	5	40	37	3	33	1.8	3.8	98/10	2	0.38	0.01	0.37	0.01	EXISTING PIT
98/10	1.8 m lintel		0	5	2	2	0	21			LOST	1	0.24	0	0.23	0	EXISTING PIT
99/01	CAPPED STUB	0.023	95	25	9	9	0	45	2.7	2.2	99/02	7	0.64	0.03	0.64	0.03	
99/02	2.4 m lintel sag	0.068	85	5	25	25	0	37	0.9	-1.3	99/03	0	0	0	0	0	
99/03	2.4 m lintel		0	15	15	15	0	53	4.2	2.1	99/04	12	0.91	0.04	1.58	0.02	
99/04	1.8 m lintel	0.036	95	25	12	12	0	73	2.2	3	99/05	41	1.58	0.07	1.58	0.07	
99/05	BUTTERFLY GRATE 900 x 600	0.11	85	15	41	35	5	70	2.5	3	99/06	33	1.47	0.06	1.51	0.06	
99/06	BUTTERFLY GRATE 900 x 600	0.076	85	25	33	30	3	71	2	3	99/07	31	1.51	0.06	1.88	0.04	
99/07	BUTTERFLY GRATE 900 x 600	0.077	85	25	31	29	2	82	1.7	3	99/08	47	1.88	0.07	1.89	0.06	
99/08	2.4 m lintel	0.121	85	15	47	43	3	58	1.8	2.9	100/01	18	1.06	0.04	1.06	0.04	
99/09	1.8 m lintel	0.058	95	5	22	21	0	41	1.5	3	99/10	9	0.48	0.04	1.59	0.02	
99/10	1.8 m lintel	0.024	95	25	9	9	0	74	4.3	1	99/11	45	1.59	0.08	2.02	0.06	
99/11	1.8 m lintel	0.12	85	25	45	38	6	86	2.7	2.4	103/01	58	2.02	0.07	2.02	0.07	
100/01	2.4 m lintel sag	0.082	95	5	34	31	3	42	0.8		100/02	3	0.53	0.01	0.67	0.01	
100/02	1.2 m lintel		0	15	3	3	0	46	0.8	-0.3	100/03	6	0.67	0.02	1.66	0.01	
100/03	1.2 m lintel	0.036	85	5	13	0	0	76	2.4	0.8	98/04	25	1.48	0.04	1.48	0.04	
100/04	1.2 m lintel		0	5	0	0	0	0	0								
102/01	1.8 m lintel		0	5	12	12	0	0	1.6	3	LOST	0	0	0	0	0	
102/02	1.8 m lintel		0	25	7	7	0	63	2.7	3	102/03	23	1.22	0.05	1.22	0.05	
102/03	1.8 m lintel	0.061	95	5	23	22	0	4	1.9	3	LOST	0	0.05	0	0.03	0	
102/04	1.8 m lintel		0	15	5	5	0	66	1.5	3	99/09	22	1.33	0.04	1.33	0.04	
104/01	1.8 m lintel		0	25	8	8	0	69	1	2.9	99/02	18	1.43	0.03	1.43	0.03	
105/01	GSIP 600x900 SAG	0.058	85	15	22	29	0	32		0.9	2/18	4	0.37	0.02	0.7	0.02	
105/02	GSIP 600x900 SAG	0.044	85	25	16	25	0	29		0.8	2/21	4	0.34	0.02	0.43	0.02	
106/01	CAPPED STUB	2.261	85	25	852	852	0	24		3	91/03	3	0.28	0.02	0.28	0.02	
107/01	CAPPED STUB	2.442	85	25	921	921	0	61			112/04	13	1.18	0.03	1.18	0.03	
108/01	CAPPED STUB	1.43	85	25	539	539	0	23			98/04	2	0.27	0.02	1.29	0.01	
109/01	CAPPED STUB	0.447	85	25	169	169	0	26			100/01	4	0.3	0.03	0.53	0.02	
110/01	1.8 m lintel		0	15	15	15	0	55		3	110/02	20	0.95	0.06	0.95	0.06	
110/02	1.8 m lintel	0.052	95	15	20	20	0	42	5	3	110/03	11	0.54	0.04	0.89	0.03	
110/03	1.8 m lintel	0.03	95	15	11	11	0	53	5	3	110/04	19	0.89	0.06	0.89	0.06	
110/04	1.8 m lintel	0.05	95	15	19	19	0	48	5	2.3	100/01	12	0.72	0.04	0.72	0.04	
111/01	CAPPED STUB	9.205	50	25	2050	2050	0	26		-2.7	91/02	5	0.3	0.03	0.46	0.02	
112/01	1.8 m lintel		0	15	46	41	5	64	2.9	3	112/02	23	1.25	0.05	1.34	0.05	
112/02	1.8 m lintel	0.056	85	25	23	23	0	66	1.4	3	112/03	21	1.34	0.04	1.34	0.04	
112/03	1.8 m lintel	0.058	85	15	21	21	0	59	1.4	3	112/04	12	1.09	0.03	1.09	0.03	
112/04	2.4 m lintel sag	0.08	85	5	30	29	0	41	0.1	3	112/05	0	6.49	0	10.93	0	
112/05	GSIP 900x900 SAG		0	15	0	5	0	8			112/06	2	0.09	0	0.45	0	
112/06	2.4 m lintel sag	0.091	85	5	27	26	0	39	0.1	3	LOST	0	0	0	0	0	
113/01	1.8 m lintel		0	15	20	20	0	43	1.9	3	113/02	9	0.57	0.04	0.95	0.03	
113/02	1.8 m lintel	0.026	85	15	9	9	0	54	5.5	2.5	113/03	16	0.95	0.04	0.94	0.04	
113/03	1.8 m lintel	0.043	85	5	16	16	0	0	1.3	3.3	LOST	0	0	0	0	0	
113/04	CAPPED STUB			5	0	0	0	0									
115/01	GSIP 900x900 SAG		0	15	0	4	0	6		0	1/04	0	0.07	0	1.56	0	
116/01	GSIP 900x900 SAG		0	5	0	4	0	7		0	1/02	0	0.08	0	1.63	0	
117/01	1.8 m lintel	0.029	95	5	11	11	0	0	2.1	3.1	LOST	0	0	0	0	0	
118/01	GSIP 900x900 SAG		0	5	0	0	0	0		0	97/01	0	0	0	0	0	
119/01	1.2 m lintel		0	25	0	0	0	47	2.5	2.4	100/03	7	0.7	0.03	1.66	0.01	
EXT26/01	CAPPED STUB	0.182	10	5	44	44	0	24			2/17	4	0.28	0.03	0.82	0.01	
EXT27/01	CAPPED STUB	0.186	10	25	58	58	0	29			30/01	4	0.34	0.02	0.94	0.01	
EXT28/01	CAPPED STUB	0.325	10	25	101	101	0	28			31/06	3	0.32	0.02	1.04	0.01	
EXT29/01	CAPPED STUB	0.247	10	25	77	77	0	159			31/05	6	5.03	0.08	1.46	0.01	

Plotted: 15 February , 2019 10:00:20 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-527.dwg

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	20/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750

P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:

DATUM:

ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

HYDROLOGIC TABLE (SHEET 2 OF 2)

PLAN No: 110350-CC-527 I

FILE No: 110350-CC-527

SHEET SIZE: A1 ORIGINAL

DESIGN STORM 1:10yr ARI HYDRAULIC RESULTS

PIPE NAME	PIPE DIAMETER	PIPE TYPE	PIPE LENGTH	PIPE GRADE	CRITICAL STORM	PEAK FLOW	CAPACITY RATIO	PEAK VELOCITY	PIPE U/S IL	PIPE D/S IL	PIPE D/S DROP	U/S PIT Ku	D/S PIT Kw	PIT LOSS (Ku.V²head)	WSE LOSS (Kw.V²head)	U/S PIPE HGL	D/S PIPE HGL	HGL GRADE	MINIMUM COVER	MINIMUM FREEBOARD	COMMENTS
(-)	(mm)	(-)	(m)	(%)	(min)	(L/s)	(-)	(m/s)	(m)	(m)	(m)	(-)	(-)	(m)	(m)	(m)	(m)	(%)	(m)	(m)	
1/01 to 1/02	375	RRJ2	49.57	1	25	17	0.09	0.93	29.421	28.926	0.087	7.09	7.09	0.04	0.01	29.47	29.001	0.95	1.1	1.288	
1/02 to 1/03	375	RRJ2	52.4	1	25	39	0.2	1.25	28.838	28.314	0.05	3.23	2.08	0.04	0.01	28.931	28.431	0.95	1.3	1.455	
1/03 to 1/04	375	RRJ2	45.76	1	25	61	0.32	1.41	28.264	27.807	0.05	1.68	1.63	0.05	0.03	28.381	27.953	0.94	1.47	1.593	
1/04 to 1/05	375	RRJ2	57.71	1	25	81	0.43	1.37	27.757	27.179	0.05	1.15	1.04	0.05	0.03	27.881	27.473	0.71	1.62	1.738	
1/05 to 1/06	450	RRJ2	40.06	1	25	223	0.72	1.89	27.129	26.729	0.44	1.01	0.93	0.11	0.08	27.362	27.012	0.87	1.62	1.847	
1/06 to 1/07	600	RRJ2	20.9	1	25	519	0.78	2.07	26.288	26.079	0.05	0.66	0.66	0.12	0.11	26.804	26.68	0.59	1.99	2.24	
1/07 to 1/08	600	RRJ2	20.29	1	25	522	0.78	2.13	26.029	25.826	0.05	0.42	0.38	0.09	0.06	26.618	26.493	0.62	1.82	2.156	
1/08 to 1/09	600	RRJ2	22.21	1	25	534	0.8	1.89	25.776	25.554	0.05	0.5	0.41	0.11	0.07	26.422	26.278	0.65	1.83	2.047	
1/09 to 1/10	675	RRJ2	9.85	1	25	613	0.67	1.74	25.504	25.406	0.192	1.16	1.22	0.17	0.18	26.108	26.064	0.45	1.69	1.888	
1/10 to 1/11	900	RRJ2	45.34	1	25	1574	0.8	2.85	25.214	24.761	0.03	0.76	0.59	0.2	0.18	25.872	25.371	1.11	1.65	2.058	
2/16 to 2/17	675	RRJ2	37.09	0.7	25	705	0.93	1.97	26.397	26.137	0.061	1.06	1.03	0.18	0.18	27.495	27.273	0.6	1.1	1.436	
2/17 to 2/18	750	RRJ2	15.56	0.53	25	845	0.96	1.91	26.077	25.994	0.05	1.98	2.42	0.33	0.38	26.948	26.872	0.49	1	0.957	
2/18 to 2/19	750	RRJ2	32.93	0.5	25	880	1.03	1.99	25.944	25.779	0.05	0.73	0.73	0.15	0.15	26.725	26.551	0.53	1.14	1.17	
2/19 to 2/20	825	RRJ2	29.19	0.5	25	882	0.8	1.73	25.729	25.583	0.05	0.41	0.41	0.06	0.06	26.495	26.402	0.32	1.49	1.776	
2/20 to 2/21	825	RRJ2	20.6	0.5	25	909	0.83	1.73	25.533	25.43	0.05	0.64	0.65	0.09	0.1	26.308	26.236	0.35	1.7	1.915	
2/21 to 1/10	825	RRJ2	23.16	0.5	25	968	0.88	1.93	25.38	25.264	0.05	0.62	0.49	0.08	0.08	26.156	26.064	0.4	1.74	1.887	
3/17 to 3/18	750	RRJ2	12.59	1	25	671	0.56	2.22	25.338	25.212	0.05	0.38	0.35	0.11	0.04	26.317	26.278	0.31	1.23	1.718	
3/18 to 3/19	1050	RRJ2	13.69	1	15	1271	0.43	2.1	25.162	25.025	0.05	0.65	0.65	0.13	0.07	26.221	26.202	0.14	1.1	1.454	
3/19 to 3/20	1050	RRJ2	21.38	1	15	1284	0.43	2.22	24.975	24.761	0.05	0.78	0.8	0.18	0.09	26.13	26.099	0.14	1.59	2.054	
3/20 to 3/21	1050	RRJ2	14.74	1	20	1244	0.42	2.27	24.711	24.564	0.05	0.35	0.39	0.15	0.04	26.062	26.038	0.16	1.61	2.259	
6/01 to 6/02	375	RRJ2	22.99	1	15	19	0.1	0.82	26.78	26.55	0.05	4.5	4.5	0.06	0.01	26.818	26.66	0.69	1.1	1.265	
6/02 to 6/03	375	RRJ2	25.55	1	25	46	0.24	1.14	26.5	26.244	0.05	3.32	2.96	0.09	0.02	26.567	26.396	0.67	1.12	1.381	
6/03 to 6/04	375	RRJ2	23.77	1	25	73	0.39	1.36	26.194	25.957	0.05	1.58	1.55	0.1	0.03	26.301	26.167	0.56	1.43	1.517	
6/04 to 6/05	450	RRJ2	24	1	25	110	0.36	1.55	25.907	25.667	0.03	0.82	0.65	0.09	0.01	26.145	26.168	-0.1	1.37	1.693	
6/05 to 6/06	525	RRJ2	23.65	1	25	134	0.29	1.66	25.637	25.4	0.05	0.74	0.56	0.07	0.01	26.165	26.157	0.03	1.41	1.808	
6/06 to 6/07	525	RRJ2	33.14	1	25	160	0.34	1.4	25.35	25.019	0.05	0.89	0.82	0.12	0.01	26.147	26.113	0.1	1.55	1.935	
6/07 to 6/08	525	RRJ2	13.86	1	25	288	0.62	1.5	24.969	24.83	0.05	1.11	2.66	0.1	0.06	26.08	26.054	0.19	1.89	2.012	
6/08 to 3/21	600	RRJ2	11	1	25	309	0.46	1.23	24.78	24.67	0.156	0.41	0.35	0.06	0.02	26.048	26.038	0.09	1.7	1.88	
10/01 to 10/02	375	RRJ2	26.44	1	15	16	0.09	0.89	26.854	26.589	0.05	4.5	4.5	0.05	0.01	26.898	26.663	0.89	1.1	1.427	
10/02 to 10/03	375	RRJ2	33.19	1	25	30	0.16	1.14	26.539	26.207	0.05	1.93	1.91	0.04	0.01	26.616	26.308	0.93	1.45	1.608	
10/03 to 10/04	375	RRJ2	34.93	1	25	51	0.27	1.28	26.157	25.808	0.03	1.49	1.43	0.08	0.01	26.254	26.224	0.09	1.49	1.782	
10/04 to 10/05	375	RRJ2	34.39	1	25	76	0.4	1.28	25.778	25.434	0.05	1.49	1.19	0.09	0.02	26.211	26.188	0.07	1.67	1.951	
10/05 to 10/06	375	RRJ2	13.5	1	25	98	0.52	1.22	25.384	25.249	0.05	1.82	2.09	0.14	0.08	26.159	26.137	0.16	1.94	2.093	
10/06 to 6/07	375	RRJ2	12.89	1	25	109	0.57	1.3	25.199	25.07	0.101	0.21	2.66	0.03	0.03	26.133	26.113	0.16	1.89	2.521	
16/01 to 16/02	375	RRJ2	10.93	1.3	15	10	0.05	0.71	28.977	28.835	0.141	8.57	8.57	0.07	0	28.994	28.889	0.96	1.12	1.423	
16/02 to 16/03	375	RRJ2	29.21	2.08	15	26	0.1	1.02	28.694	28.087		4.41	3.77	0.04	0.01	28.735	28.215	1.78	1.1	1.517	
26/01 to 26/02	375	RRJ2	13.65	1.03	15	6	0.03	0.63	35.103	34.962	0.05	8.61	8.61	0.05	0	35.122	35.008	0.84	0.98	1.287	EXISTING PIPE
26/02 to 26/03	375	RRJ2	15.11	2.93	15	15	0.05	0.66	34.912	34.469		4.33	4.17	0.04	0	34.927	34.61	2.1	1.1	1.378	EXISTING PIPE
29/01 to 29/02	375	RRJ2	11.13	1	25	14	0.07	0.76	26.384	26.273	0.03	4.5	4.5	0.08	0	26.412	26.413	-0.01	1.1	1.363	
29/02 to 29/03	375	RRJ2	11.27	1	25	18	0.09	0.96	26.243	26.13	0.05	0.2	0.2	0.01	0	26.413	26.413	0	1.47	1.955	
29/03 to 2/20	375	RRJ2	25.85	1	25	26	0.14	0.96	26.08	25.822	0.288	4.73	5.97	0.08	0	26.41	26.402	0.03	1.64	1.799	
30/01 to 2/17	375	RRJ2	25.12	1	25	67	0.35	0.71	26.439	26.188	0.111	4.5	4.5	0.12	0.08	27.294	27.273	0.08	1.37	1.495	
31/01 to 31/02	375	RRJ2	49.41	1	25	36	0.19	1.07	29.266	28.772	0.05	7.09	7.09	0.09	0.04	29.325	28.884	0.89	1.1	1.383	
31/02 to 31/03	375	RRJ2	51.94	1	25	60	0.32	1.39	28.722	28.202	0.05	1.77	1.75	0.05	0.03	28.836	28.35	0.94	1.28	1.548	
31/03 to 31/04	375	RRJ2	47.07	1	25	84	0.44	1.53	28.152	27.681	0.05	1.37	1.32	0.06	0.04	28.294	27.856	0.93	1.46	1.706	
31/04 to 31/05	375	RRJ2	51.15	1	25	110	0.58	1.55	27.631	27.12	0.05	1.07	1.07	0.08	0.04	27.78	27.651	0.25	1.63	1.86	
31/05 to 31/06	450	RRJ2	46.07	1	25	188	0.61	1.29	27.07	26.609	0.05	1.24	1.05	0.13	0.07	27.58	27.413	0.36	1.72	2.022	
31/06 to 31/07	525	RRJ2	9.4	1	25	298	0.64	1.46	26.559	26.465	0.03	4.5	4.5	0.44	0.44	26.998	26.964	0.36	1.87	1.95	
31/07 to 1/06	525	RRJ2	9.66	1	25	293	0.63	1.71	26.435	26.338	0.05	0.2	0.2	0.05	0.02	26.947	26.91	0.38	2.05	2.637	
54/02 to 54/03	675	RRJ2	9.58	1.74	25	597	0.5	1.84	25.573	25.406	0.05	0.64	0.64	0.21	0.09	26.448	26.423	0.26	1.1	1.499	
54/03 to 3/18	750	RRJ2	11	1	15	601	0.5	1.48	25.356	25.246	0.084	2.11	2.67	0.2	0.25	26.28	26.278	0.02	1.11	1.222	
80/01 to 1/09	375	RRJ2	7.27	1	25	94	0.5	0.87	25.627	25.554	0.05	7.27	7.27	0.21	0.22	26.273	26.278	-0.07	2.07	2.18	
82/01 to 1/05	375	RRJ2	10.46	1	25	126	0.66	1.22	27.284	27.179	0.05	7.51	7.51	0.29	0.29	27.555	27.473	0.78	0.82	1.97	
																				-1.1	
																				-1.1	
																				-0.235	
90/01 to 90/02	3000x1200	Box Culvert	15.61	0.5	120	6071	0.5	1.95	27.706	27.628	0	0.5	0.5	0.09	0.07	28.805	28.781	0.15	-1.09	2.097	
90/02 to 90/03	3000x1200	Box Culvert	44.92	0.5	120	6074	0.5	1.96	27.628	27.403	0	0.91	0.94	0.18	0.14	28.639	28.597	0.09	1.04	2.111	
90/03 to 90/04	3000x1200	Box Culvert	36.05	0.5	120	6105	0.51	1.84	27.403	27.223	0	0.5	0.5	0.1	0.07	28.525	28.481	0.12	2.31	3.102	
90/04 to 90/05	3000x1200	Box Culvert	124.62	0.5	120	6105	0.51	1.7	27.223	26.6	0	0.5	0.5	0.09	0.07	28.409	28.245	0.13	2.37	3.05	
90/05 to 90/06	(2x)2100x900	Box Culvert	10.02	0.5	120	7964	0.77	2.11	26.6	26.55	0	1.75	2.03	0.35	0.39	27.892	27.75	1.42	2.56	2.276	
																				-1.2	
91/01 to 91/02	375	RRJ2	14.78	3.92	25	30	0.08	1.3	29.294	28.714	0.187	4.5	4.5	0.08	0.02	29.298	29.254	0.3	1	1.225	
91/02 to 91/03	375	RRJ2	9	1	25	69	0.36	0.88	28.527	28.437	0.05	2.09	2.03	0.12	0.03	29.228	29.233	-0.06	1.1	0.8	
91/03 to 91/04	675	RRJ2	14.45	1	25	933	1.02	2.67	28.387	28.243	0.05	0.61	0.61	0.21	0.21	29.034	28.841	1.34	1.03	0.843	
91/04 to 91/05	750	RRJ2	24.99	1	25	913	0.76	2.46	28.193	27.943	-0.357	0.03	0.03	0.01	0.01	28.669	28.63	0.16	1.19	1.503	
91/05 & 91/06	SPECIAL PIT	Box Culvert	1.87	1.07	25	1230	0.13	1.89	28.3	28.28	1.652	0	0	0	0	28.63	28.47	8.57	0.87	1.641	COMBINED SPECIAL PIT
91/06 to 91/07	1200x900	Box Culvert	7.82	1	25	1231	0.34	1.14	26.628	26.55		2.09	2.66	0.14	0.17	27.766	27.75	0.2		1.553	
																				-1.2	

JOINS DRG 110350-CC-529

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H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	20/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

HYDRAULIC TABLE (SHEET 1 OF 2)

PLAN No: 110350-CC-528 I

FILE No: 110350-CC-528

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:00:37 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-528.dwg

JOINS DRG 110350-CC-528

DESIGN STORM 1:10yr ARI HYDRAULIC RESULTS

PIPE NAME (-)	PIPE DIAMETER (mm)	PIPE TYPE (-)	PIPE LENGTH (m)	PIPE GRADE (%)	CRITICAL STORM (min)	PEAK FLOW (L/s)	CAPACITY RATIO (-)	PEAK VELOCITY (m/s)	PIPE U/S IL (m)	PIPE D/S IL (m)	PIPE D/S DROP (m)	U/S PIT Ku (-)	D/S PIT Kw (-)	PIT LOSS (Ku.V²head) (m)	WSE LOSS (Kw.V²head) (m)	U/S PIPE HGL (m)	D/S PIPE HGL (m)	HGL GRADE (%)	MINIMUM COVER (m)	MINIMUM FREEBOARD (m)	COMMENTS
97/01 to 97/02	375	RRJ2	44	2.08	25	38	0.14	1.45	30.425	29.509	0.03	4.5	4.5	0.05	0.03	30.484	29.636	1.93	1	1.449	
97/02 to 97/03	375	RRJ2	44.5	1.06	25	59	0.3	0.71	29.479	29.007	0.05	1.61	1.56	0.09	0.02	29.548	29.54	0.02	1	1.397	
97/03 to 97/04	375	RRJ2	4.66	1	25	78	0.41	0.71	28.957	28.91		1.7	1.89	0.04	0.05	29.497	29.489	0.17	1.19	0.878	
																				-0.724	
98/01 to 98/02	375	RRJ2	48	4.26	15	19	0.05	1.59	36.958	34.913	0.121	9.44	9.44	0.03	0.01	36.994	34.969	4.22	1.1	1.384	
98/02 to 98/03	375	RRJ2	49	4.95	25	40	0.1	2.27	34.793	32.366	1.116	2.42	2.39	0.02	0.02	34.858	32.444	4.93	1.1	1.492	
98/03 to 98/04	375	RRJ2	22.42	1	25	69	0.36	0.78	31.25	31.026	0.05	2.2	2.66	0.12	0.05	32.042	32.011	0.14	1.63	2.028	
98/04 to 98/05	675	RRJ2	8.97	1	25	649	0.71	1.9	30.976	30.886	0.05	0.91	0.91	0.14	0.14	31.868	31.826	0.47	1.26	1.172	
98/05 to 98/06	750	RRJ2	19.41	1	25	861	0.71	1.95	30.836	30.642	0.05	0.5	0.38	0.12	0.07	31.758	31.661	0.5	1.55	1.568	
98/06 to 98/07	750	RRJ2	7.49	1	25	888	0.74	2.04	30.592	30.517	0.05	1.99	2.44	0.39	0.47	31.267	31.207	0.8	1.94	1.705	
98/07 to 98/08	750	RRJ2	12.15	1	25	893	0.74	2.23	30.467	30.346	0.055	0.64	0.64	0.16	0.13	31.073	30.926	1.21	1.6	1.989	
98/08 to 98/09	1050	RRJ2	21.99	2.58	120	1176	0.25	1.69	30.29	29.724	-0.004	0.2	2.66	0.01	0	30.926	31.328	-1.83	1.11	1.668	
98/09 to 98/10	1050	RRJ2	35.89	1	25	1224	0.41	1.41	29.728	29.368	0.05	2.1	2.66	0.09	0.12	31.311	30.985	0.91	1.15	1.028	
98/10 to 98/11	1050	RRJ2	26.88	0.99	120	1288	0.44	1.49	29.318	29.051		0.21	0.21	0.02	0.02	30.968	30.769	0.74	1.22	0.826	EXISTING PIPE
																				-1.718	
99/01 to 99/02	375	RRJ2	5.03	1	15	9	0.05	0.51	34.876	34.825	0.05	7	7	0.05	0	34.963	34.969	-0.12	1.1	1.411	
99/02 to 99/03	375	RRJ2	9.03	1	25	34	0.18	0.83	34.775	34.685	0.05	7.41	6.12	0.1	0.03	34.871	34.809	0.69	1.11	1.365	
99/03 to 99/04	375	RRJ2	13.42	1	25	48	0.25	1.16	34.635	34.501	0.159	2.18	1.77	0.08	0.02	34.729	34.63	0.74	1.13	1.351	
99/04 to 99/05	375	RRJ2	27.49	2.54	25	68	0.23	1.74	34.341	33.642	0.033	1.13	1.13	0.04	0.02	34.422	33.811	2.22	1.1	1.404	
99/05 to 99/06	375	RRJ2	20.46	1.97	25	102	0.38	1.82	33.61	33.208	0.049	1.71	1.54	0.11	0.06	33.706	33.408	1.46	1.1	1.372	
99/06 to 99/07	375	RRJ2	20.18	1.61	25	134	0.55	1.82	33.158	32.834	0.046	1.14	1.08	0.12	0.07	33.295	33.12	0.87	1.1	1.319	
99/07 to 99/08	375	RRJ2	36.36	1.37	25	155	0.69	1.61	32.788	32.288	0.05	0.9	0.91	0.1	0.09	33.042	32.853	0.52	1.1	1.337	
99/08 to 99/09	375	RRJ2	24.68	1	15	193	1.02	1.8	32.238	31.991	0.05	1.72	1.36	0.18	0.2	32.697	32.46	0.96	1.13	1.15	
99/09 to 99/10	375	RRJ2	18.08	3.08	20	276	0.83	2.85	31.941	31.385	0.128	0.59	0.52	0.12	0.17	32.352	32.045	1.7	1.1	1.238	
99/10 to 99/11	375	RRJ2	18.37	2.55	25	254	0.84	2.3	31.257	30.789	0.113	0.57	0.49	0.12	0.13	31.939	31.603	1.83	1.1	0.919	
99/11 to 98/09	375	RRJ2	13.19	1.17	25	283	1.38	2.57	30.676	30.522	0.794	1.46	1.33	0.25	0.42	31.385	31.328	0.43	1.1	0.726	
100/01 to 100/02	375	RRJ2	8.96	1	25	223	1.18	2.02	31.772	31.682	0.05	0.81	0.81	0.16	0.16	32.602	32.478	1.38	1.15	0.919	
100/02 to 100/03	375	RRJ2	10.32	1	25	232	1.22	2.1	31.632	31.529	0.05	0.28	0.28	0.06	0.06	32.42	32.274	1.41	1.19	1.126	
100/03 to 100/04	375	RRJ2	14.23	1	25	238	1.25	2.16	31.479	31.336	0.05	0.33	0.33	0.08	0.08	32.204	32.012	1.35	1.26	1.192	
100/04 to 98/05	375	RRJ2	8.36	1	25	245	1.29	2.21	31.286	31.203	0.367	0.4	0.4	0.1	0.1	31.933	31.826	1.28	1.46	1.4	
102/01 to 102/02	375	RRJ2	28.43	2.23	15	11	0.04	1.07	34.8	34.167	0.11	7	7	0.03	0	34.832	34.218	2.16	1.1	1.471	
102/02 to 102/03	375	RRJ2	45.71	2.23	25	19	0.07	1.09	34.057	33.037	0.03	1.77	1.71	0.01	0	34.11	33.133	2.14	1.1	1.526	
102/03 to 102/04	375	RRJ2	28.31	1.41	25	42	0.19	1.25	33.007	32.608	0.03	3.72	2.84	0.06	0.02	33.073	32.759	1.11	1.1	1.442	
102/04 to 99/09	375	RRJ2	42.17	1.06	15	47	0.94	1.37	32.578	32.13	0.189	0.65	0.57	0.02	0.04	32.739	32.46	0.66	1.1	1.363	
104/01 to 99/04	375	RRJ2	28.11	3.33	25	9	0.02	0.99	35.307	34.371	0.03	7.06	7.06	0.02	0	35.327	34.463	3.07	0.69	1.072	
105/01 to 105/02	375	RRJ2	32.45	1	25	29	0.15	0.94	26.973	26.649	0.05	8.54	8.54	0.1	0.03	27.015	26.747	0.83	1.1	1.365	
105/02 to 2/21	375	RRJ2	15.53	2.44	25	53	0.18	1.61	26.599	26.219	0.839	2.6	2.6	0.09	0.03	26.661	26.327	2.15	1.24	1.741	
106/01 to 91/03	675	RRJ2	2.67	1.51	25	860	0.77	2.52	28.712	28.671	0.284	0.5	0.5	0.15	0.15	29.338	29.233	3.93	0.8	0.744	
107/01 to 112/03	675	RRJ2	8.29	1	25	918	1.01	2.56	28.898	28.815	0.143	0.5	0.5	0.17	0.17	30.02	29.942	0.94	0.9	0.692	
108/01 to 98/04	600	RRJ2	3.9	1	25	537	0.81	1.94	31.364	31.325	0.349	1.5	1.5	0.28	0.28	32.029	32.011	0.46	1.1	1.018	
109/01 to 100/01	375	RRJ2	5.74	1	25	166	0.87	1.5	31.986	31.929	0.157	1.5	1.5	0.17	0.17	32.775	32.754	0.37	1.1	1.287	
110/01 to 110/02	375	RRJ2	40.36	4.23	15	15	0.04	1.48	36.99	35.282	0.079	9.44	9.44	0.03	0.01	37.022	35.332	4.19	1.1	1.413	
110/02 to 110/03	375	RRJ2	22.92	5.28	25	35	0.08	2.08	35.203	33.993	0.05	3.23	2.99	0.04	0.01	35.253	34.064	5.19	1.1	1.437	
110/03 to 110/04	375	RRJ2	30.98	4.14	25	50	0.13	2.21	33.943	32.66	0.208	1.14	1.14	0.02	0.01	34.018	32.792	3.96	1.1	1.473	
110/04 to 100/01	375	RRJ2	18.72	3.37	25	75	0.21	1.08	32.452	31.822	0.05	1.77	1.42	0.12	0.02	32.771	32.754	0.09	1.1	1.405	
111/01 to 90/04	1200	RRJ2	40.4	1.5	25	2055	0.4	1.82	27.256	26.65	0.05	8.02	8.02	0.85	0.85	28.338	28.245	0.23	1.82	2.908	
112/01 to 112/02	375	RRJ2	42	2.19	20	49	0.17	1.4	30.418	29.497	0.03	7.01	7.01	0.09	0.05	30.464	30.02	1.06	1.1	1.446	
112/02 to 112/03	375	RRJ2	42	1.19	25	114	0.55	1.35	29.467	28.968	0.296	3.39	1.12	0.1	0.05	29.994	29.942	0.12	1.1	1.394	
112/03 to 112/04	750	RRJ2	40.9	0.9	25	987	0.86	2.23	28.672	28.305	0.05	1.56	1.72	0.34	0.36	29.602	29.33	0.67	0.9	0.882	
112/04 to 112/05	825	RRJ2	9	1	25	1011	0.65	1.94	28.255	28.165	0.03	2.1	2.67	0.37	0.46	28.959	28.889	0.78	1.02	0.952	
112/05 to 112/06	825	RRJ2	9	1	25	1015	0.65	2.14	28.134	28.044	0.05	0.22	0.22	0.09	0.04	28.845	28.817	0.31	1.23	1.687	
112/06 to 91/05	825	RRJ2	5.78	1	25	1044	0.67	2.03	27.994	27.936	-0.363	0.59	0.59	0.12	0.12	28.703	28.63	1.26	1.23	1.36	
113/01 to 113/02	375	RRJ2	14.13	4.59	15	19	0.05	1.36	29.465	28.816	1.365	8.32	8.32	0.06	0.01	29.487	28.871	4.36	1.1	1.288	
113/02 to 113/03	675	RRJ2	16.66	0.82	25	736	0.89	2.08	27.451	27.314	0.05	1.42	1.5	0.3	0.32	28.063	27.943	0.72	1.77	1.937	
113/03 to 113/04	675	RRJ2	3.62	1	25	763	0.84	2.35	27.264	27.228		0.3	0.3	0.07	0.07	27.874	27.701	4.78	1.6	1.869	
																				-0.458	

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	20/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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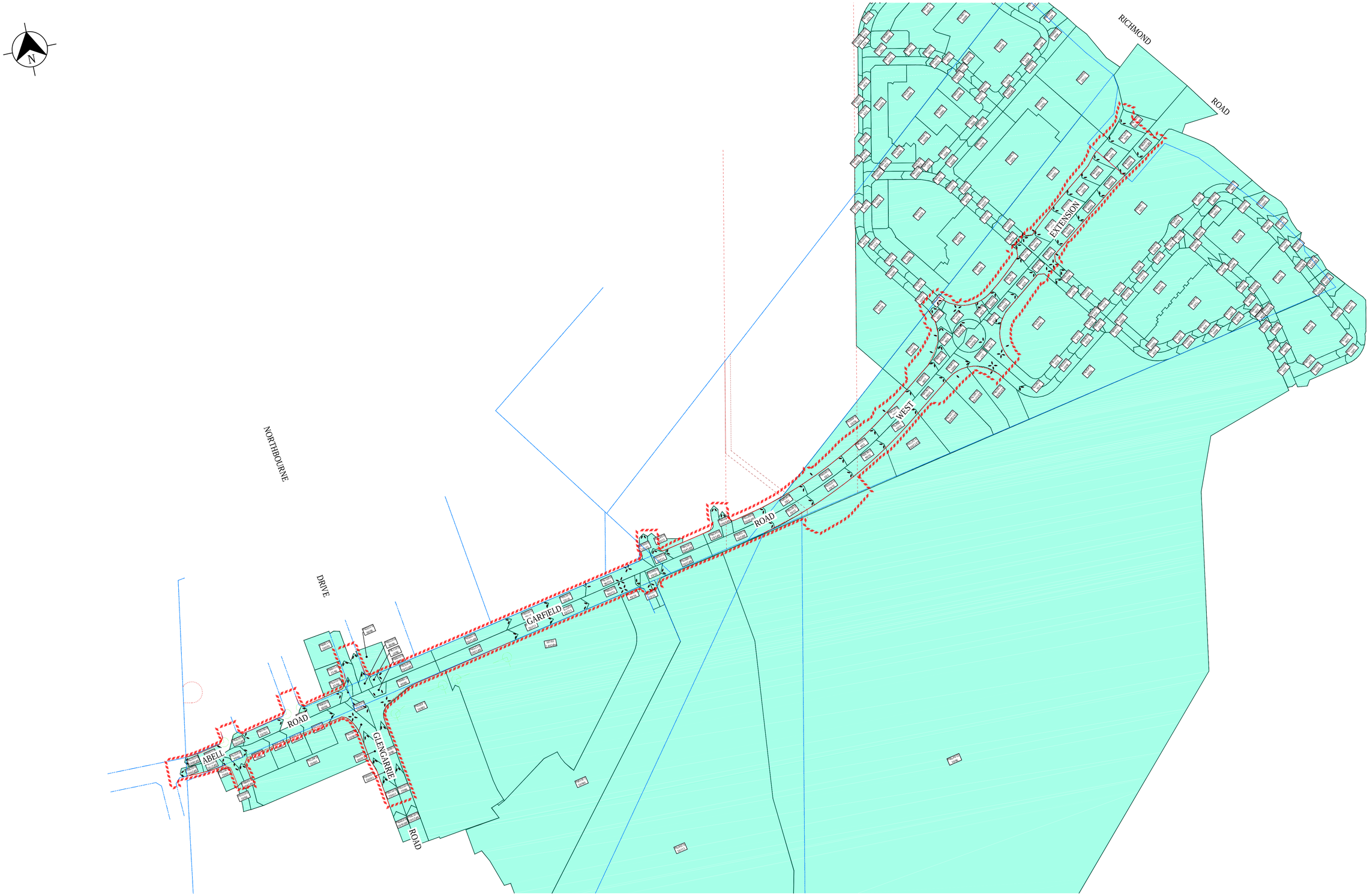
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

HYDRAULIC TABLE (SHEET 2 OF 2)

PLAN No: 110350-CC-529 I
FILE No: 110350-CC-529
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:00:46 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-529.dwg



1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100

METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

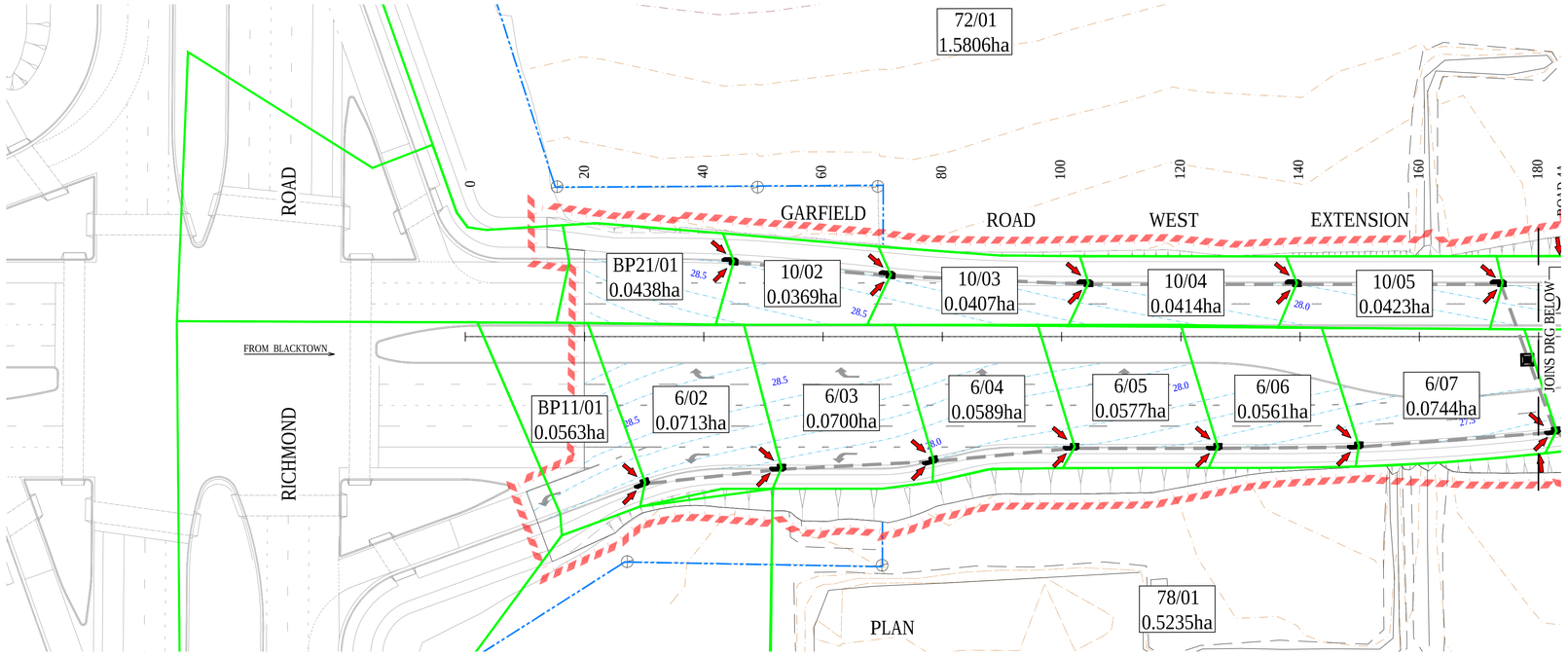
CATCHMENT OVERVIEW PLAN

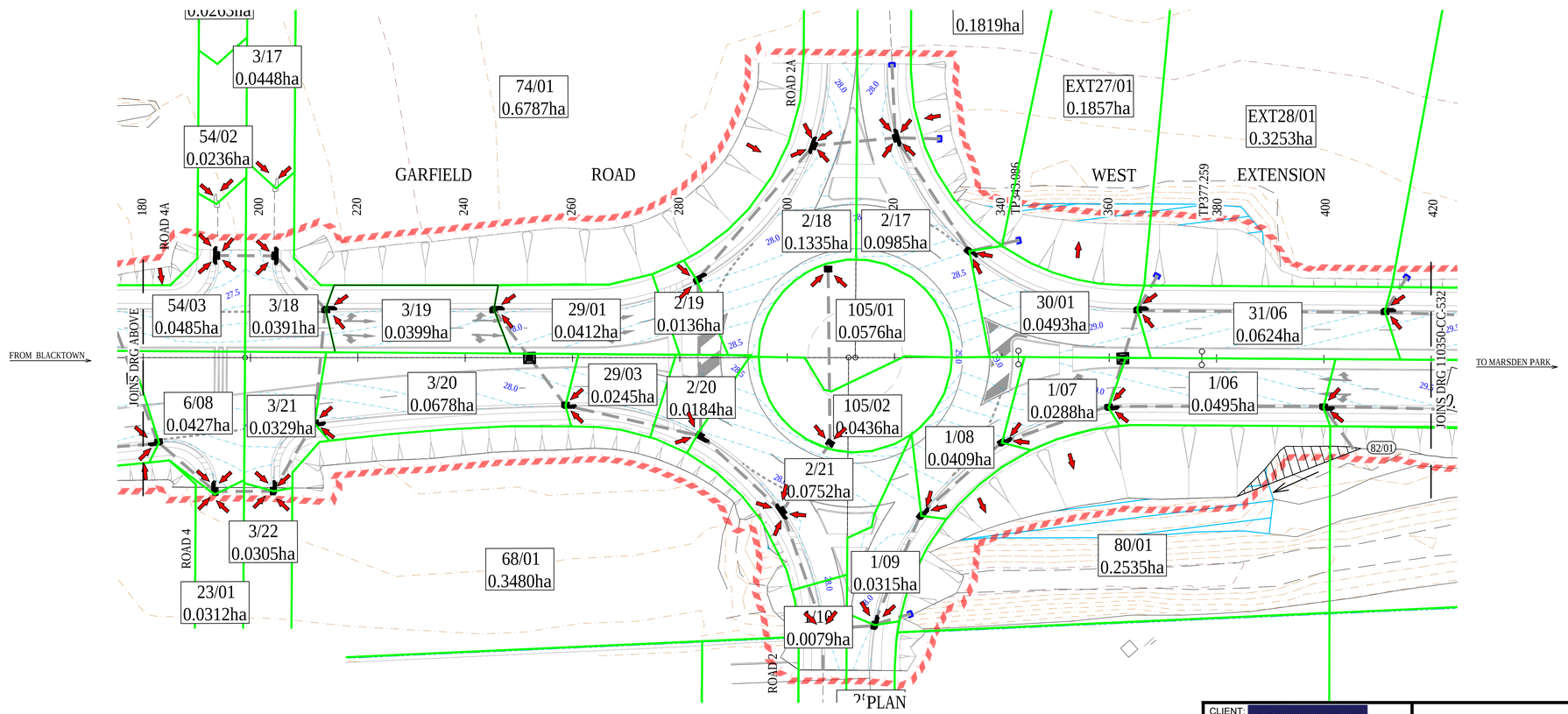
PLAN No: 110350-CC-530 I

FILE No: 110350-CC-530

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February 2019 10:00:54 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-530.dwg





1:500 (AT A1)
1:1000 (AT A3)

METRES

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS REFER TO 110350-CC-003
2. REFER TO 110350-CC-501 TO 110350-CC-504 FOR DRAINAGE LAYOUT

LEGEND

- NEW STORMWATER PIPE (RCP) AND CAP
- NEW GRATED SURFACE INLET PIT (GSIP)
- NEW GRATED KERB INLET PIT (0.9m KIP)
- NEW GRATED KERB INLET PIT (1.8m KIP)
- NEW JUNCTION PIT
- NEW GRATED KERB IINLET PIT (SAG)
- NEW MEDIAN PIT (RMS TYPE SF)
- NEW TRAFFIC ISLAND PIT (RMS TYPE SL)
- NEW STORMWATER HEADWALL (SMALL - LARGE
- 3/01 — NEW STORMWATER (LINE 3, PIT 01)
- 7500 — STORMWATER DIRECTION OF FLOW AND PIPE S
- LIMIT OF WORKS
- NEW PEDESTRIAN RAMP
- NEW REINFORCED CONCRETE BOX CULVERT (R
- DAM AREA TO BE BACKFILLED
- 31.0 — DESIGN CONTOUR (MAJOR)
- DESIGN CONTOUR (MINOR)

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CLIENT: Stockland

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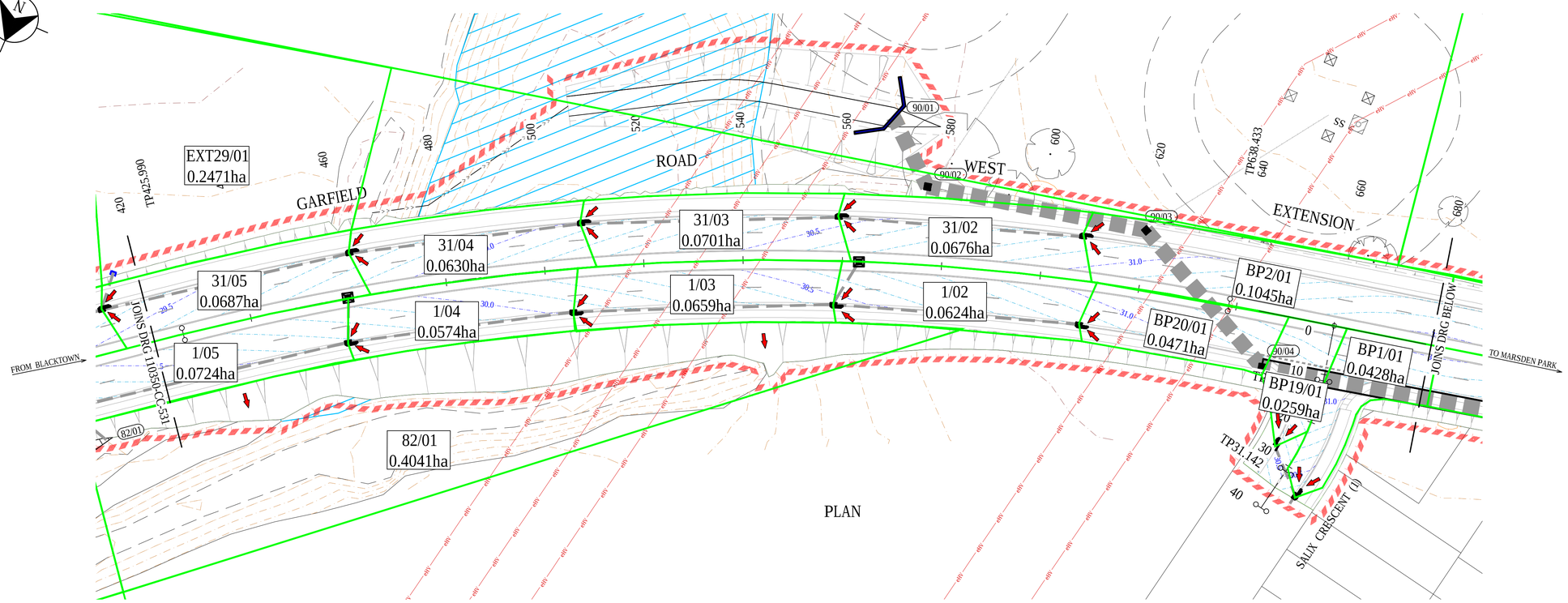
FOR CONSTRUCTION APPROVAL

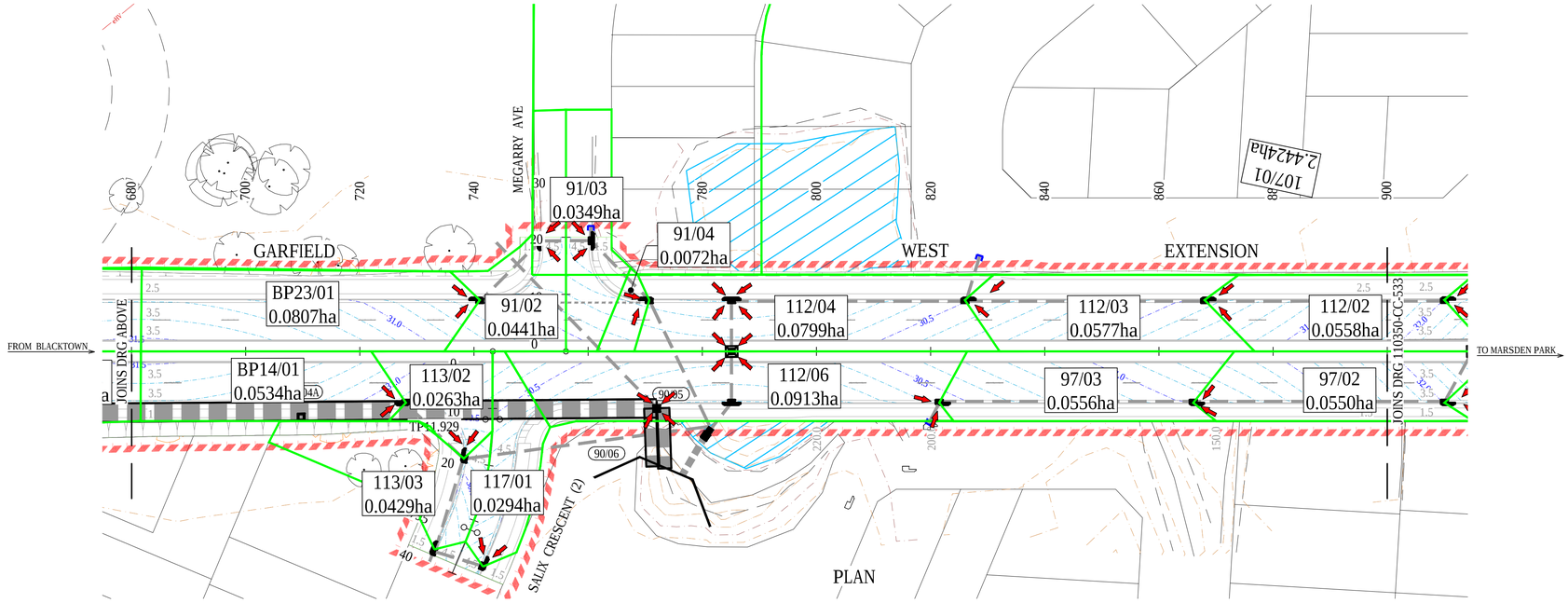
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CATCHMENT PLAN (SHEET 1 OF 4)

PLAN No: 110350-CC-531 I
FILE No: 110350-CC-531
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:01:15 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-531.dwg





NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS REFER TO 110350-CC-003
2. REFER TO 110350-CC-501 TO 110350-CC-504 FOR DRAINAGE LAYOUT

LEGEND

- NEW STORMWATER PIPE (RCP) AND CAP
- NEW GRATED SURFACE INLET PIT (GSIP)
- NEW GRATED KERB INLET PIT (0.9m KIP)
- NEW GRATED KERB INLET PIT (1.8m KIP)
- NEW JUNCTION PIT
- NEW GRATED KERB INLET PIT (SAG)
- NEW MEDIAN PIT (RMS TYPE SF)
- NEW TRAFFIC ISLAND PIT (RMS TYPE SL)
- NEW STORMWATER HEADWALL (SMALL - LARGE
- 3/01 NEW STORMWATER (LINE 3, PIT 01)
- 7500 STORMWATER DIRECTION OF FLOW AND PIPE S
- LIMIT OF WORKS
- NEW PEDESTRIAN RAMP
- NEW REINFORCED CONCRETE BOX CULVERT (R
- DAM AREA TO BE BACKFILLED
- 31.0 DESIGN CONTOUR (MAJOR)
- DESIGN CONTOUR (MINOR)

1:500 (AT A1)
1:1000 (AT A3)
10 0 10 20 30 40 50
METRES

AMENDMENT		DES	DRN	CKD	APR	DATE
I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18

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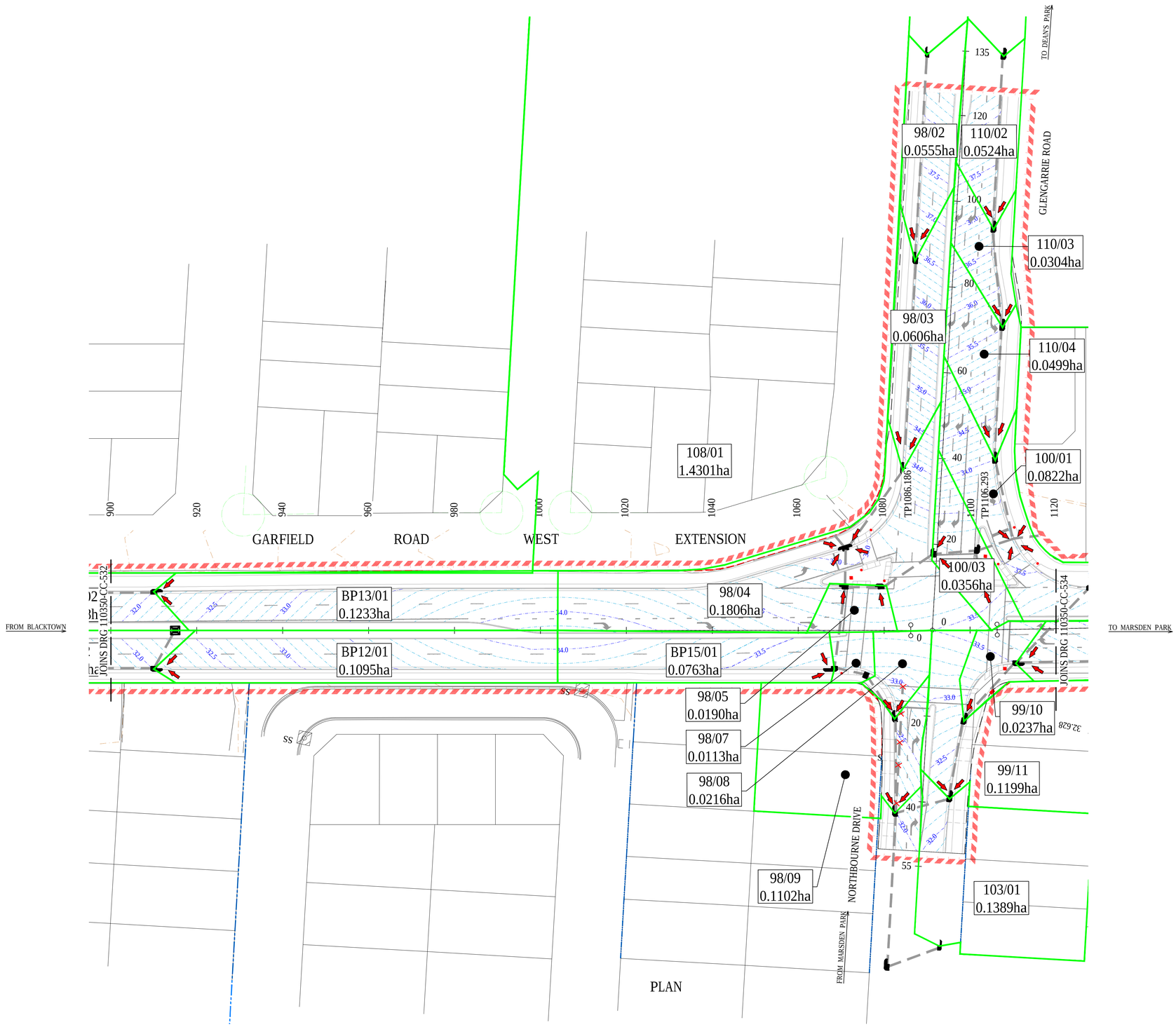
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CATCHMENT PLAN (SHEET 2 OF 4)

PLAN No: 110350-CC-532 I
FILE No: 110350-CC-532
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:01:33 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-532.dwg



1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS REFER TO 110350-CC-003
2. REFER TO 110350-CC-501 TO 110350-CC-504 FOR DRAINAGE LAYOUT

LEGEND

- NEW STORMWATER PIPE (RCP) AND CAP
- NEW GRATED SURFACE INLET PIT (GSIP)
- NEW GRATED KERB INLET PIT (0.9m KIP)
- NEW GRATED KERB INLET PIT (1.8m KIP)
- NEW JUNCTION PIT
- NEW GRATED KERB INLET PIT (SAG)
- NEW MEDIAN PIT (RMS TYPE SF)
- NEW TRAFFIC ISLAND PIT (RMS TYPE SL)
- NEW STORMWATER HEADWALL (SMALL - LARGE
- 3/01 — NEW STORMWATER (LINE 3, PIT 01)
- 7500 — STORMWATER DIRECTION OF FLOW AND PIPE S
- LIMIT OF WORKS
- NEW PEDESTRIAN RAMP
- NEW REINFORCED CONCRETE BOX CULVERT (R
- DAM AREA TO BE BACKFILLED
- 31.0 — DESIGN CONTOUR (MAJOR)
- DESIGN CONTOUR (MINOR)

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
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CLIENT: Stockland

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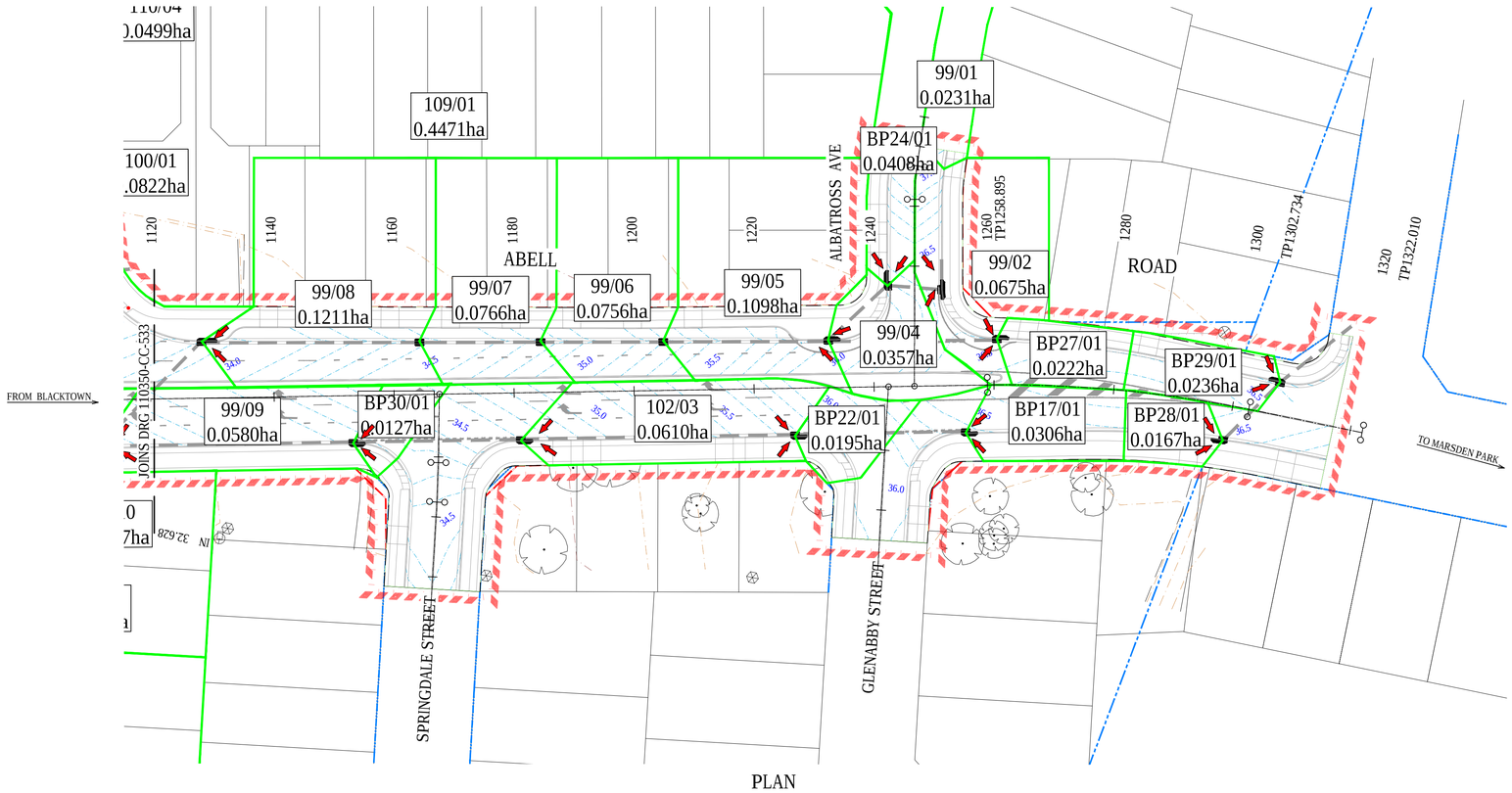
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CATCHMENT PLAN (SHEET 3 OF 4)

PLAN No: 110350-CC-533 I
FILE No: 110350-CC-533
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:01:50 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-533.dwg



PLAN

NOTES

1. FOR CONSTRUCTION NOTES AND SUPPLEMENTARY DRAWINGS REFER TO 110350-CC-003
2. REFER TO 110350-CC-501 TO 110350-CC-504 FOR DRAINAGE LAYOUT

LEGEND

- NEW STORMWATER PIPE (RCP) AND CAP
- NEW GRATED SURFACE INLET PIT (GSIP)
- NEW GRATED KERB INLET PIT (0.9m KIP)
- NEW GRATED KERB INLET PIT (1.8m KIP)
- NEW JUNCTION PIT
- NEW GRATED KERB IINLET PIT (SAG)
- NEW MEDIAN PIT (RMS TYPE SF)
- NEW TRAFFIC ISLAND PIT (RMS TYPE SL)
- NEW STORMWATER HEADWALL (SMALL - LARGE
- 3/01 NEW STORMWATER (LINE 3, PIT 01)
- 7500 STORMWATER DIRECTION OF FLOW AND PIPE S
- LIMIT OF WORKS
- NEW PEDESTRIAN RAMP
- NEW REINFORCED CONCRETE BOX CULVERT (R
- DAM AREA TO BE BACKFILLED
- 31.0 DESIGN CONTOUR (MAJOR)
- DESIGN CONTOUR (MINOR)

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CATCHMENT PLAN (SHEET 4 OF 4)

PLAN No: 110350-CC-534 I
FILE No: 110350-CC-534
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:02:07 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-534.dwg

SOIL AND WATER MANAGEMENT NOTES

GENERAL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE BLACKTOWN CITY COUNCIL.

2. BULK EARTHWORKS ARE TO BE UNDERTAKEN IN STAGES. THE CONTRACTOR IS TO PREPARE A STAGING PLAN WHICH IS TO BE SUBMITTED TO THE PCA PRIOR TO THE COMMENCEMENT OF WORKS.

3. TOPSOIL FROM ALL AREAS TO BE DISTURBED SHALL BE STOCKPILED AND LATER RESPREAD TO AID REVEGETATION IN THOSE AREAS.

4. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILIZED AS EARLY AS POSSIBLE DURING DEVELOPMENT.

5. ALL TAIL-OUT DRAINS SHALL BE COUCH GRASSED AND TRAPEZOIDAL IN SECTION. STRAW BALES SHALL BE PLACED AS A SEDIMENT CONTROL DEVICE WHERE REQUIRED.

6. VEHICULAR TRAFFIC SHALL BE CONTROLLED DURING DEVELOPMENT CONFINING ACCESS WHERE POSSIBLE TO PROPOSED OR EXISTING ROAD ALIGNMENTS. AREAS TO BE LEFT UNDISTURBED SHALL BE MARKED OFF.

7. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.

8. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A MAXIMUM 60% FULL OF SOLID MATERIALS, INCLUDING DURING THE MAINTENANCE PERIOD.

9. THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.

10. CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" ("THE BLUE BOOK").

11. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.

12. THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (PREF 2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES - WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDENTIFIED WITH BARRIER FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAXIMUM WIDTH OF 10m	THE SITE MANAGER SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES. WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS.
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION.

NOTE:
WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED - ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE C-FACTORS BELOW 0.05 FROM 1st JANUARY TO 15th MAY USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

13. GENERALLY WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE AND WILL BE DETAILED IN THE CONSTRUCTION CERTIFICATE DRAWINGS. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:-

    a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE CC PLANS AND TO DETAIL(SD) 6-7.
    b. CONSTRUCT STABILISED SITE ACCESS AS SHOWN ON THE CC PLANS AND TO DETAIL (SD) 6-14
    c. CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE CC PLANS AND TO DETAIL (SD) 5-5.
    d. PROVIDE TEMPORARY ACCESS TO THE SEDIMENT BASIN(S)AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6-8 OR BARRIER FENCING AND EARTH BANKS (SD) 5-6.
    e. PLACE SEDIMENT FENCING (SD) 6-8 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF THE SEDIMENT BASINS.

    f. CONSTRUCT SEDIMENT BASIN(S) GENERALLY IN ACCORDANCE WITH (SD) 6-4
    g. STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASIN(S) AS SOON AS FINAL LEVELS ARE ESTABLISHED
    h. CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE CC PLANS OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD) 4-1.
    i. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS.
    j. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 14 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
    k. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

14. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE

15. EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER THAN:-

    a. 2(h) - 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
    b. 2.5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
    c. 3(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
    d. 4(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
    e. 5(h) - 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
    f. 6(h) - 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

    SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

16. PROTECTION FROM EROSIVE FORCES SHALL BE UNDERTAKEN ON ALL LANDS TO MEET THE REQUIREMENTS OF TABLE 7-1 "MAXIMUM ACCEPTABLE C-FACTORS AT NOMINATED TIMES DURING WORKS" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION"

17. TEMPORARY GROUND COVER IN SHEET FLOW AREAS IS TO BE IN ACCORDANCE WITH TABLE 9-4 "PLANT SPECIES FOR GROUND COVER" FROM "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION 4TH EDITION" WHERE PRACTICAL FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATED AREAS

18. WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO BE SCHEDULED SO THAT THE TIME FROM STARTING LAND DISTURBANCE ACTIVITIES TO STABILISATION IS A DURATION OF LESS THAN 6 MONTHS - THIS MEANS ACHIEVING A C-FACTOR OF LESS THAN 0.1 AND SETTING IN MOTION A PROGRAM THAT ENSURES THAT IT DROPS PERMANENTLY, (BY VEGETATION, PAVING, ARMOURING etc.) TO LESS THAN 0.05 WITHIN A FURTHER 60 DAYS. LOCAL WATER RESTRICTIONS PERMITTING, LANDS THAT HAVE BEEN NEWLY PLANTED WITH GRASS SPECIES SHALL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER HAS BEEN ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER SHALL BE APPLIED AS NECESSARY IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE VEGETATIVE PROTECTION. NOTWITHSTANDING THIS SCHEDULE WORKS SO THAT THE DURATION FROM THE CONCLUSION OF LAND SHAPING TO THE COMPLETION OF FINAL STABILISATION IS LESS THAN 20 WORKING DAYS.

19. SEDIMENT FENCES (SD) 6-8 SHALL:-

    a. BE INSTALLED WHERE SHOWN ON THE CC PLANS AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
    b. HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m, AND A STORAGE DEPTH OF AT LEAST 0.6m.
    c. PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHMENT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 40litres/sec IN A MAX. 20yr Tc DISCHARGE.

20. STOCKPILES (SD) 4-1 SHALL BE LOCATED AS SHOWN ON THE CC PLANS AND AT THE DISCRETION OF THE SITE SUPERINTENDENT.

21. DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDANTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.

22. NOTWITHSTANDING NOTE 21 STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.

23. THE SEDIMENT RETENTION BASINS (SD) 6-4 SHALL:-

    a. BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
    b. BE FLOCCULATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
    c. HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.

24. STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 4TH ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:-

    a. LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
    b. THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
    c. THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT
    d. DISCHARGING SEDIMENT FROM THE SITE.

25. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR.

26. WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD) 6-8 & 6-9.

27. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED.

28. ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

STOCKPILE NOTES:

1. SPOIL AN TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREAS WHERE WATER MAY CONCENTRATE.

2. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 14 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.

3. FOLLOWING CONSTRUCTION, TOPSOIL SHALL BE RESPREAD TO A MINIMUM DEPTH OF 100mm ON THE BARE SOIL SURFACES AND REVEGETATE.

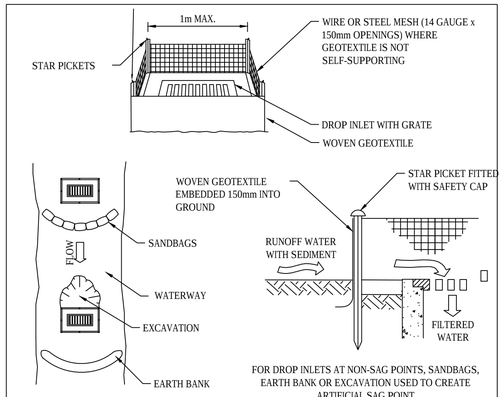
4. PLASTIC SHEETING MUST BE PLACED OVER THE STOCKPILE TO MINIMISE WIND BLOWN DUST.

SEDIMENTATION CONTROL DEVICES:

1. ALL STRAW BALES SHALL BE BOUND WITH WIRE. STRAW BALES SHALL BE PLACED END TO END IN A SINGLE ROW AND EMBEDDED INTO THE SOIL TO A DEPTH OF 100mm. EACH BALE SHALL BE SECURELY ANCHORED WITH TWO STEEL STAKES DRIVEN 450mm INTO THE GROUND AND LOCKED ON THE BALE CENTRELINE.

2. SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG IT'S LOWER EDGE.

3. PROVIDE STRIP OF TURF MIN. 300mm WIDE BEHIND KERB + 1m WIDE AROUND ALL SURFACE INLET PITS



CONSTRUCTION NOTES

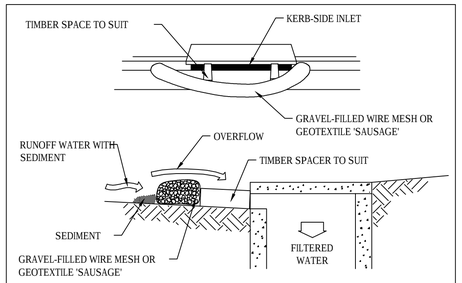
1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.

2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1m CENTRES.

3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.

4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER SD6-12 N.T.S.



NOTE: THIS PRACTICE ONLY TO BE USED WHERE SPECIFIED IN AN APPROVED SWMP/ESCP.

CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.

2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm-50mm GRAVEL.

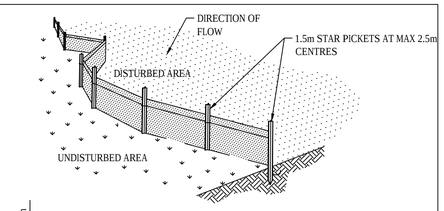
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.

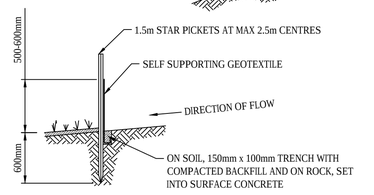
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.

5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BY-PASSING THE FILTER.

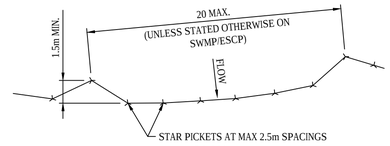
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

MESH & GRAVEL INLET FILTER SD6-11 N.T.S.





SECTION DETAIL



PLAN

CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.

2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.

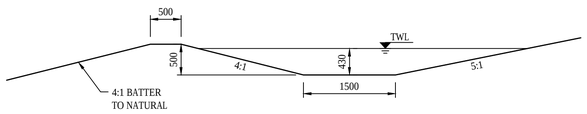
3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.

4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.

5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE SD6-8 N.T.S.



DIVERSION DRAIN

SCALE 1:50

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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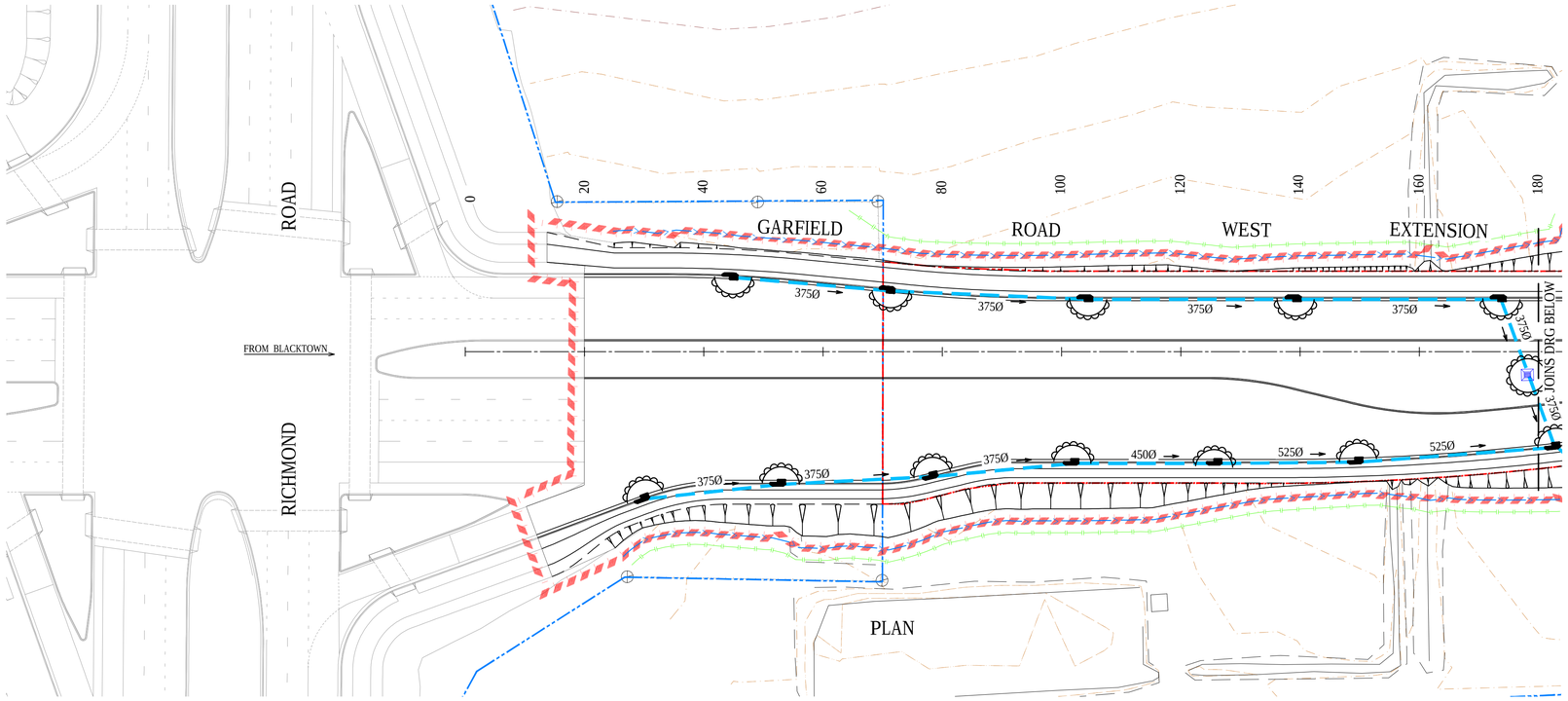
FOR CONSTRUCTION APPROVAL

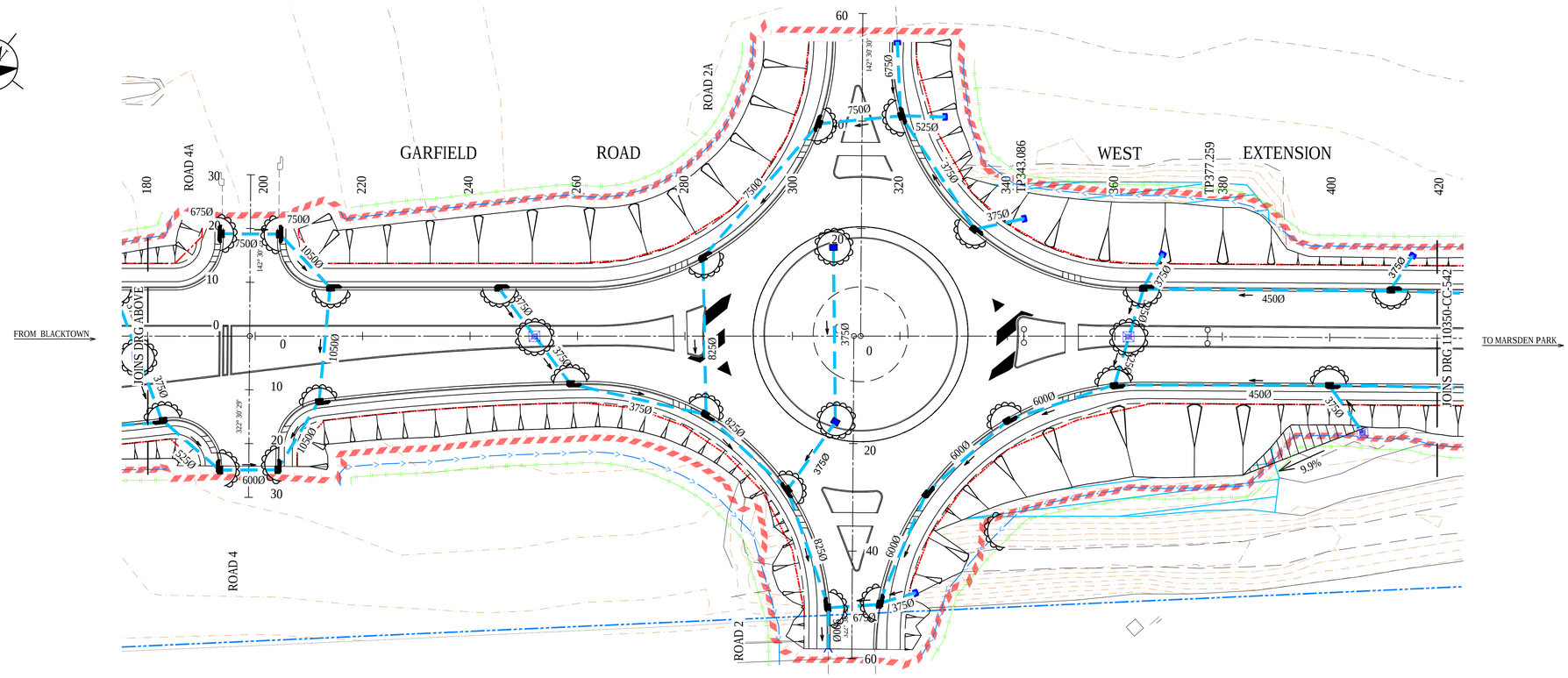
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

SOIL AND WATER MANAGEMENT PLAN (SHEET 1 OF 5)

PLAN No: 110350-CC-540 E
FILE No: 110350-CC-540
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:02:13 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-540.dwg





1:500 (AT A1)
1:1000 (AT A3)

METRES

NOTE

1 FOR EROSION AND SEDIMENT CONTROL NOTES REFER TO DRAWING 110350-CC-540

SEDIMENT AND EROSION LEGEND

- SILT FENCE
- FILTER ROLLS
- GEOTEXTILE INLET FILTER (SURROUNDS GSIP)
- STRAW BALE BARRIER
- DIVERSION DRAIN

NOTES

1. FOR GENERAL DRAINAGE NOTES, REFER TO 110242-CC-500
2. FOR TYPICAL DETAILS, REFER TO 110242-CC-013.

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
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	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

SOIL AND WATER MANAGEMENT PLAN (SHEET 2 OF 5)

PLAN No: 110350-CC-541 E
FILE No: 110350-CC-541
SHEET SIZE: A1 ORIGINAL

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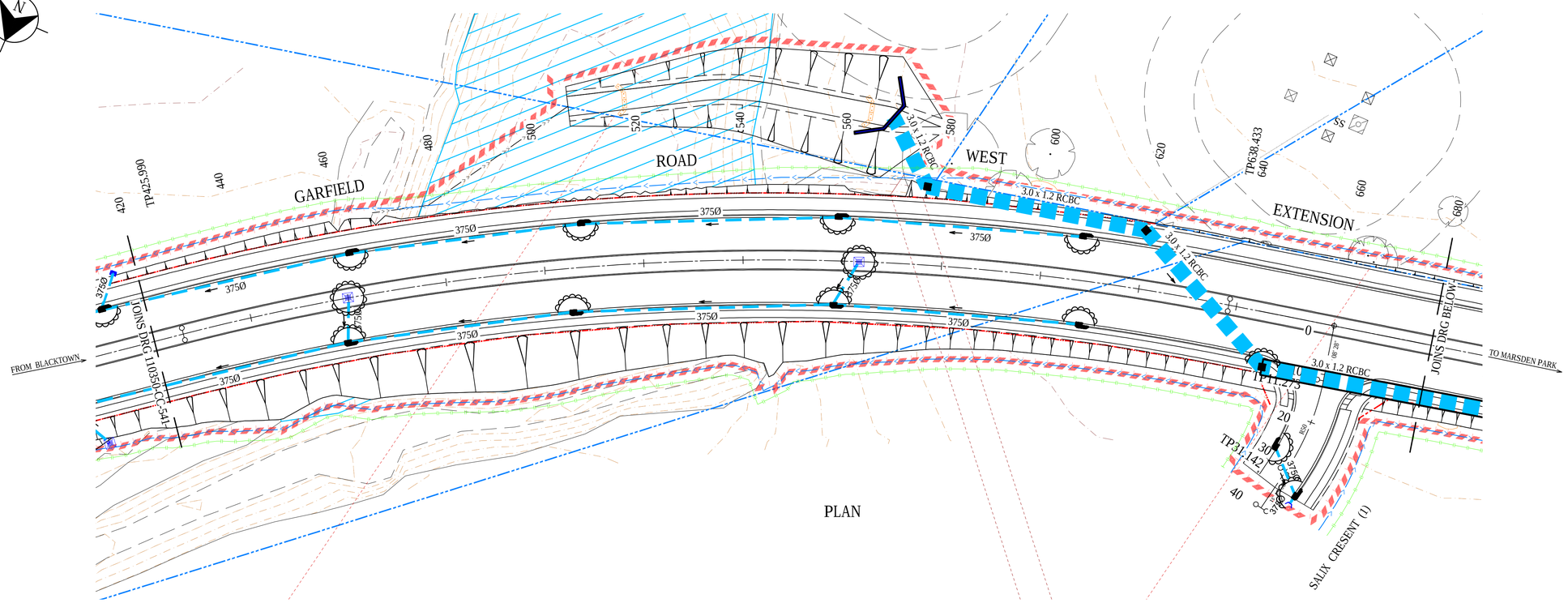

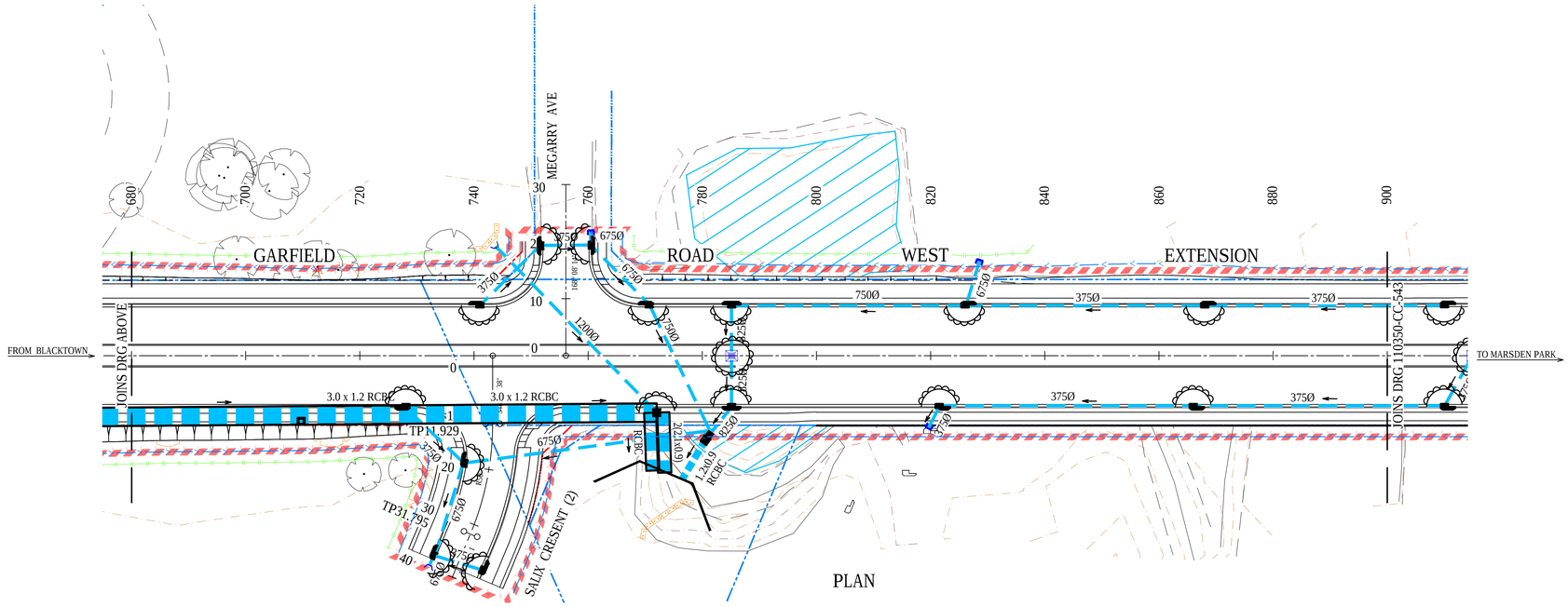

NOTE

1 FOR EROSION AND SEDIMENT CONTROL NOTES REFER TO DRAWING 110350-CC-540

SEDIMENT AND EROSION LEGEND

- SILT FENCE
- FILTER ROLLS
- GEOTEXTILE INLET FILTER (SURROUNDS GSIP)
- STRAW BALE BARRIER
- DIVERSION DRAIN

NOTES

1. FOR GENERAL DRAINAGE NOTES, REFER TO 110242-CC-500
2. FOR TYPICAL DETAILS, REFER TO 110242-CC-013.

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/20
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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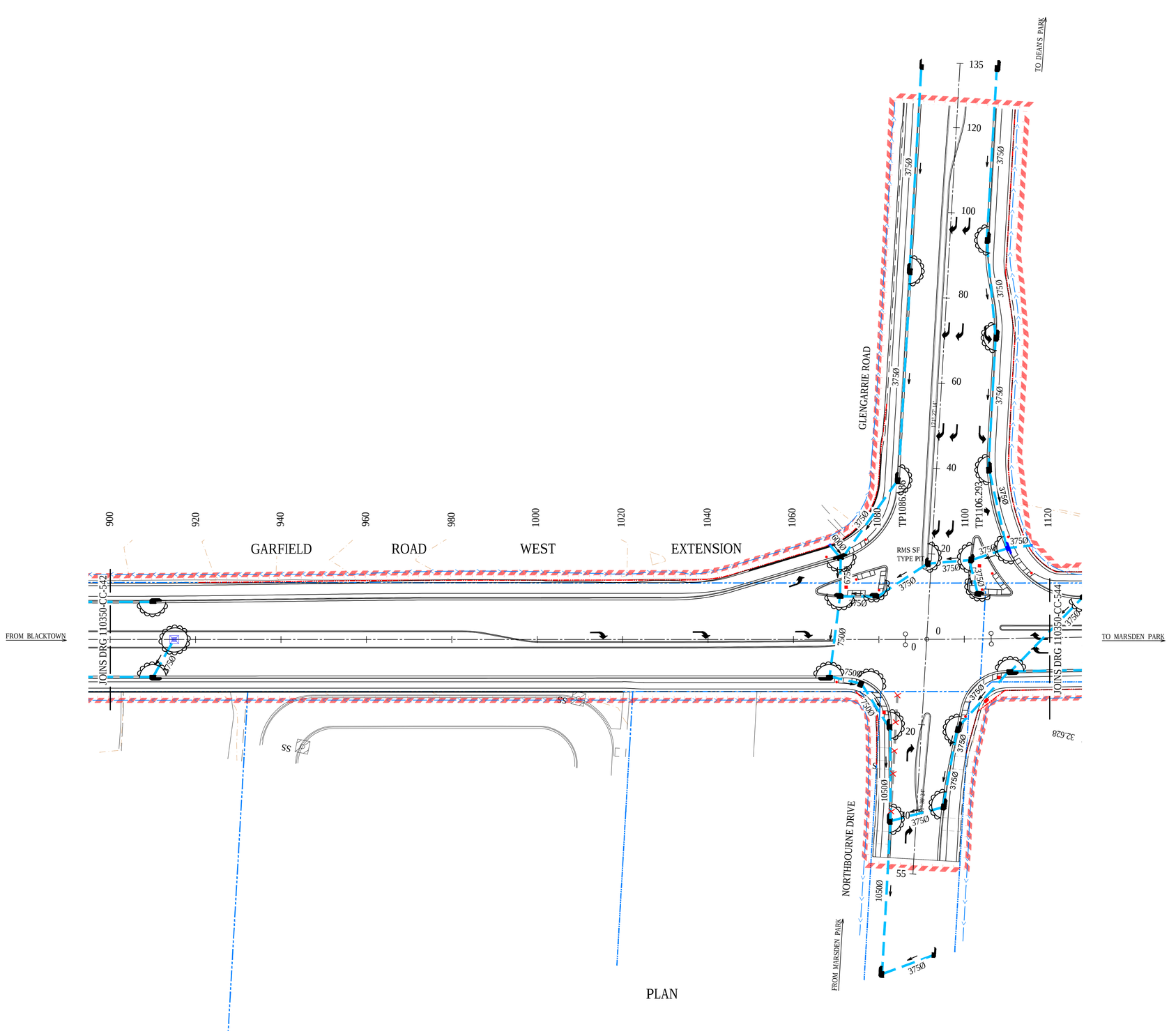
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

SOIL AND WATER MANAGEMENT PLAN (SHEET 3 OF 5)

PLAN No: 110350-CC-542 E
FILE No: 110350-CC-542
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:02:42 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-542.dwg



PLAN

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50

METRES

NOTE

1 FOR EROSION AND SEDIMENT CONTROL NOTES REFER TO DRAWING 110350-CC-540

SEDIMENT AND EROSION LEGEND

- SILT FENCE
- FILTER ROLLS
- GEOTEXTILE INLET FILTER (SURROUNDS GSIP)
- STRAW BALE BARRIER
- DIVERSION DRAIN

NOTES

1. FOR GENERAL DRAINAGE NOTES, REFER TO 110242-CC-500
2. FOR TYPICAL DETAILS, REFER TO 110242-CC-013.

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/21
	AMENDMENT	DES	DRN	CKD	APR	DATE

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

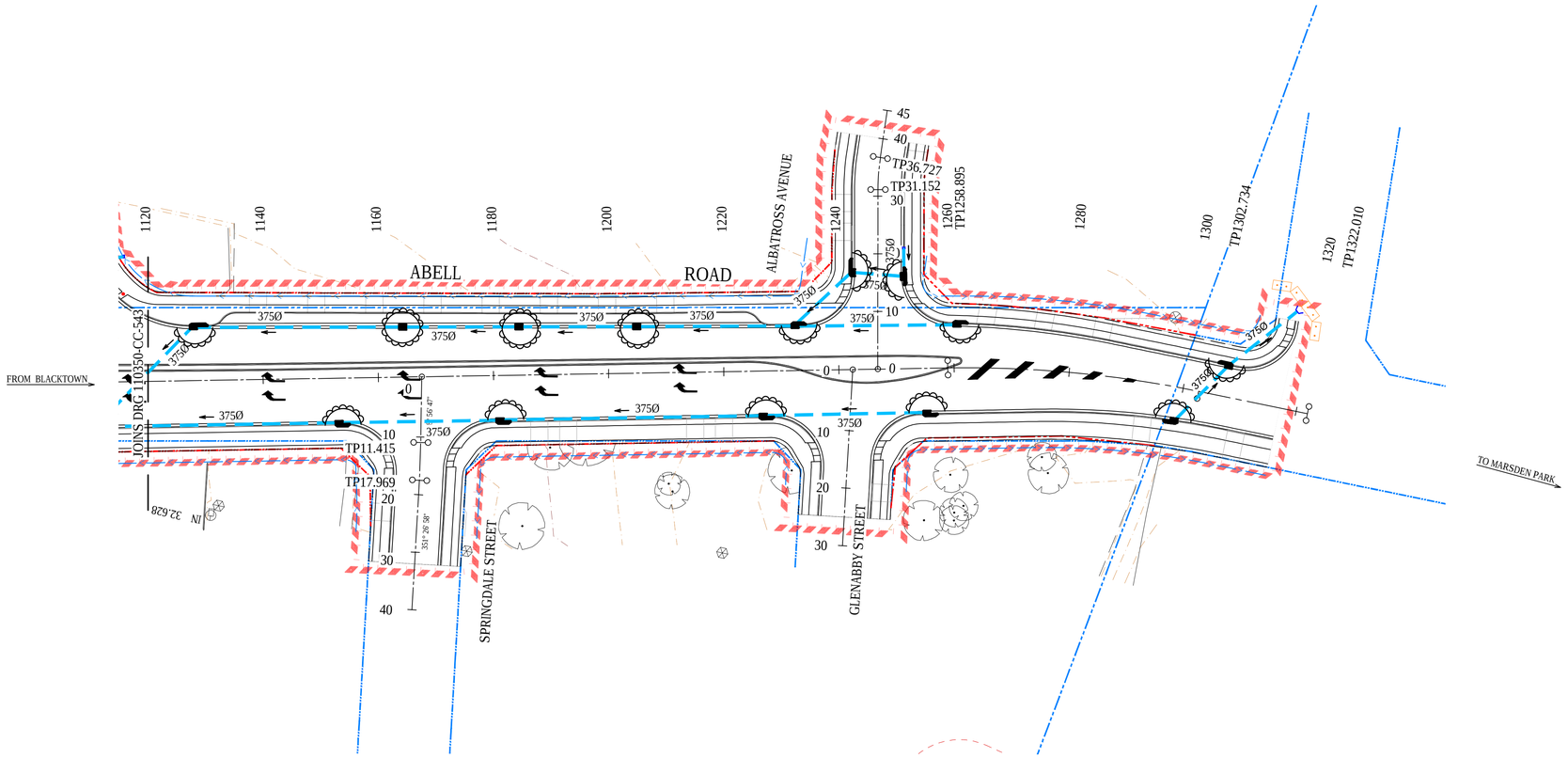
SOIL AND WATER MANAGEMENT PLAN (SHEET 4 OF 5)

PLAN No: 110350-CC-543 E

FILE No: 110350-CC-543

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:02:54 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-543.dwg



PLAN

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50

METRES

NOTE

1 FOR EROSION AND SEDIMENT CONTROL NOTES REFER TO DRAWING 110350-CC-540

SEDIMENT AND EROSION LEGEND

- SILT FENCE
- FILTER ROLLS
- GEOTEXTILE INLET FILTER (SURROUNDS GSIP)
- STRAW BALE BARRIER
- DIVERSION DRAIN

NOTES

1. FOR GENERAL DRAINAGE NOTES, REFER TO 110242-CC-500
2. FOR TYPICAL DETAILS, REFER TO 110242-CC-013.

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/22
	AMENDMENT	DES	DRN	CKD	APR	DATE

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

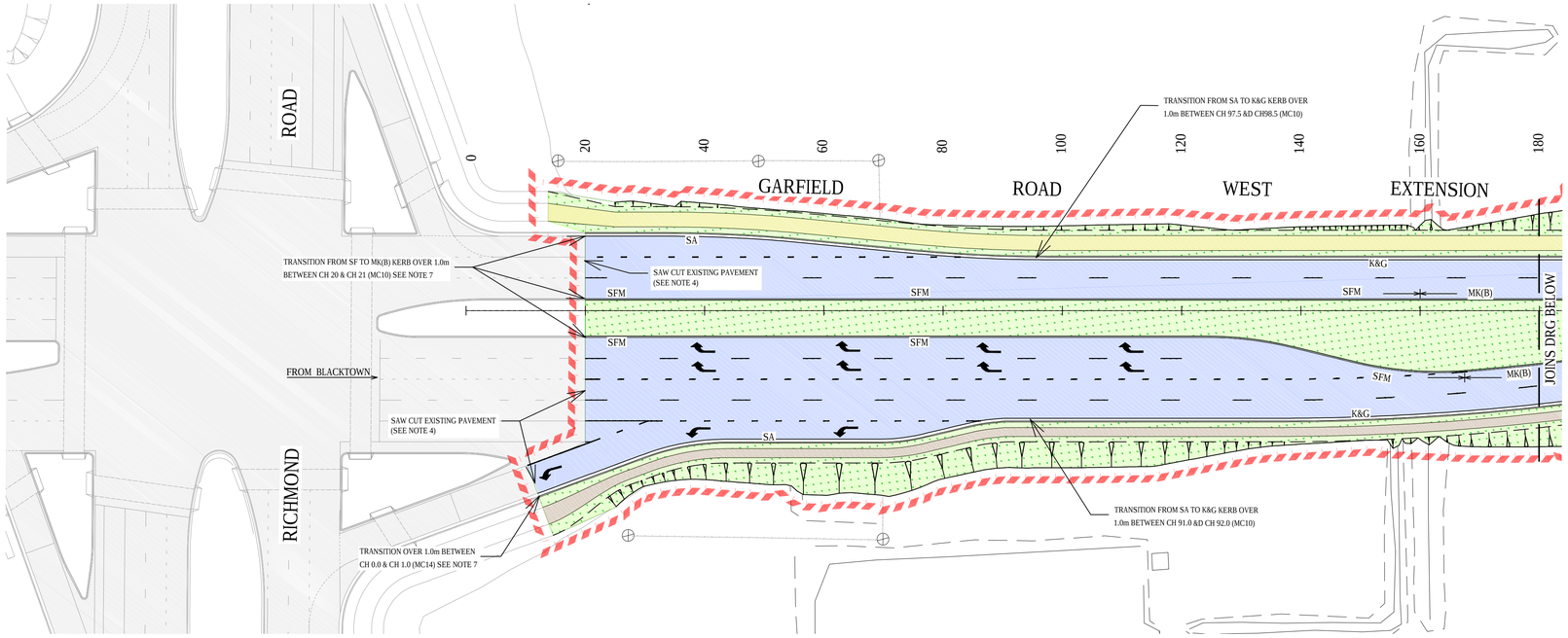
SOIL AND WATER MANAGEMENT PLAN (SHEET 5 OF 5)

PLAN No: 110350-CC-544 E

FILE No: 110350-CC-544

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:03:05 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-544.dwg

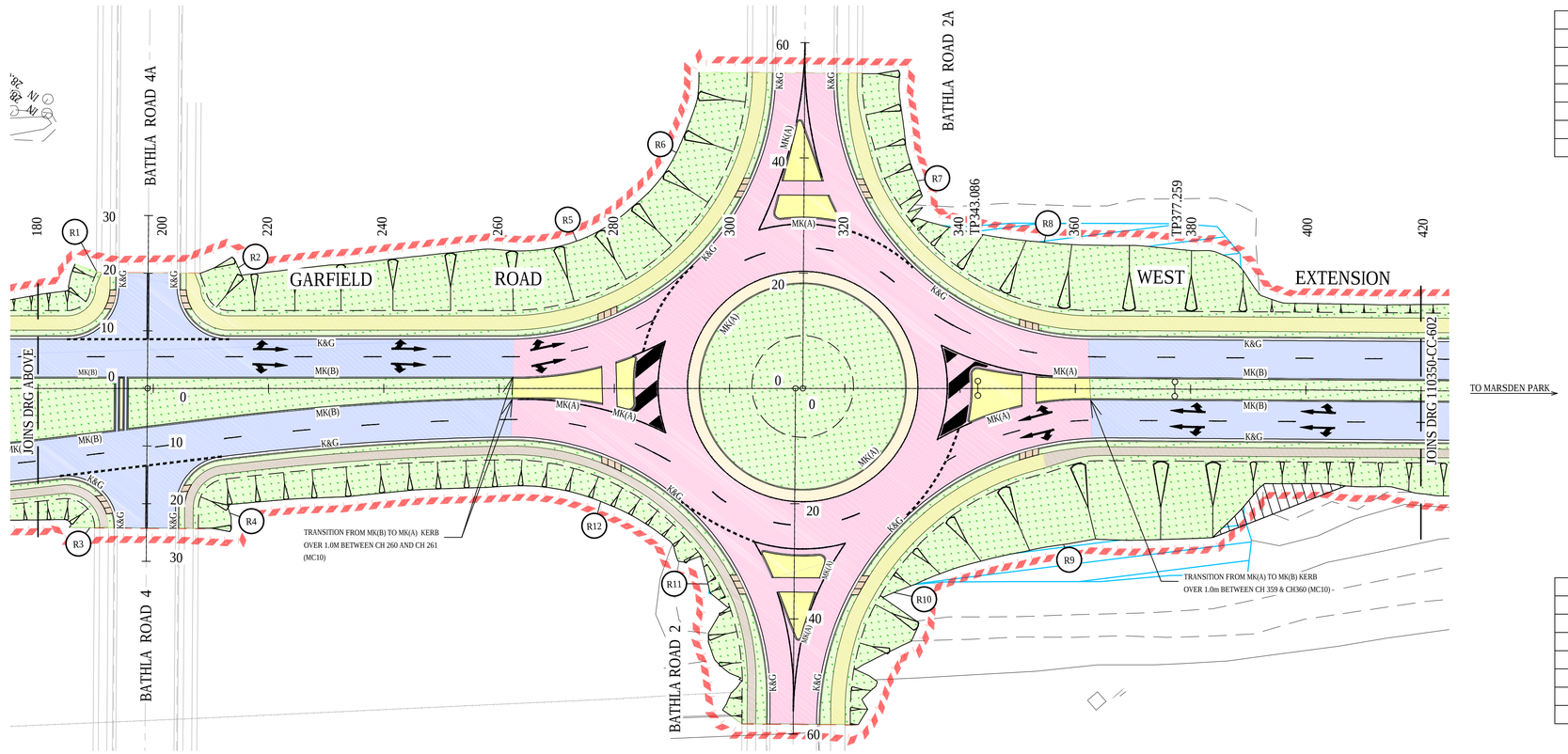


NOTES

1. FOR GENERAL NOTES AND STANDARD DRAWINGS REFER TO CC-003
2. FOR PAVEMENT AND KERB INTERFACE DETAILS REFER TO PLAN NO. CC-009
3. EXISTING KERB AND GUTTER, FOOTPATH AND ROAD PAVEMENT ARE TO BE RETAINED WHERE NOT IMPACTED BY THE ROADWORKS.
4. LOCATION OF SAWCUT LINES AND NEW PAVEMENT WORKS TO BE CONFIRMED BY COUNCILS ENGINEER.
5. ALL KERBS, FOOTPATHS AND ROAD PAVEMENTS THAT ARE TO BE DEMOLISHED ARE TO BE SAW CUT TO ENSURE A CLEAN EDGE.
6. FOR SETTING OUT OF KERB RAMPS REFER TO 300 SERIES PLANS
7. NEW KERB TO MATCH EXISTING KERB FACE ALIGNMENT

PAVEMENT LEGEND

- NEW PAVEMENT (TYPE 1)
- BATHLA ROAD ROUNDABOUT (TYPE 2)
- NEW CONCRETE ANULUS (TYPE 3)
- NEW CONCRETE MEDIAN ISLAND (TYPE 4)
- NEW SHARED PATH (TYPE 5)
- NEW CONCRETE PATH/KERB RAMPS (TYPE 6)
- NEW FOOTWAY CROSSINGS (DRIVEWAYS) (TYPE 7)
- LANDSCAPE ZONE (TYPE 8)
- EXISTING PAVEMENT (TYPE 9)



KERB RAMP SCHEDULE				
LABEL	TYPE	EASTING	NORTHING	COMMENTS
R1	R300.11	298801.369	6269178.019	NEW PEDESTRIAN RAMP
R2	R300.11	298791.970	6269170.709	NEW PEDESTRIAN RAMP
R3	R300.11	298780.748	6269206.000	NEW PEDESTRIAN RAMP
R4	R300.11	298771.874	6269197.208	NEW PEDESTRIAN RAMP
R5	R300.11	298732.264	6269127.277	NEW PEDESTRIAN RAMP
R6	R300.11	298727.074	6269094.799	NEW PEDESTRIAN RAMP

KERB RAMP SCHEDULE				
LABEL	TYPE	EASTING	NORTHING	COMMENTS
R7	R300.11	298711.330	6269082.722	NEW PEDESTRIAN RAMP
R8	R300.11	298673.332	6269083.955	NEW PEDESTRIAN RAMP
R9	R300.11	298660.311	6269100.695	NEW PEDESTRIAN RAMP
R10	R300.11	298669.633	6269137.539	NEW PEDESTRIAN RAMP
R11	R300.11	298685.389	6269149.627	NEW PEDESTRIAN RAMP
R12	R300.11	298716.501	6269146.494	NEW PEDESTRIAN RAMP

1:500 (AT A1)
1:1000 (AT A3)
10 0 10 20 30 40 50
METRES

AMENDMENT	DES	DRN	CKD	APR	DATE
E ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/22

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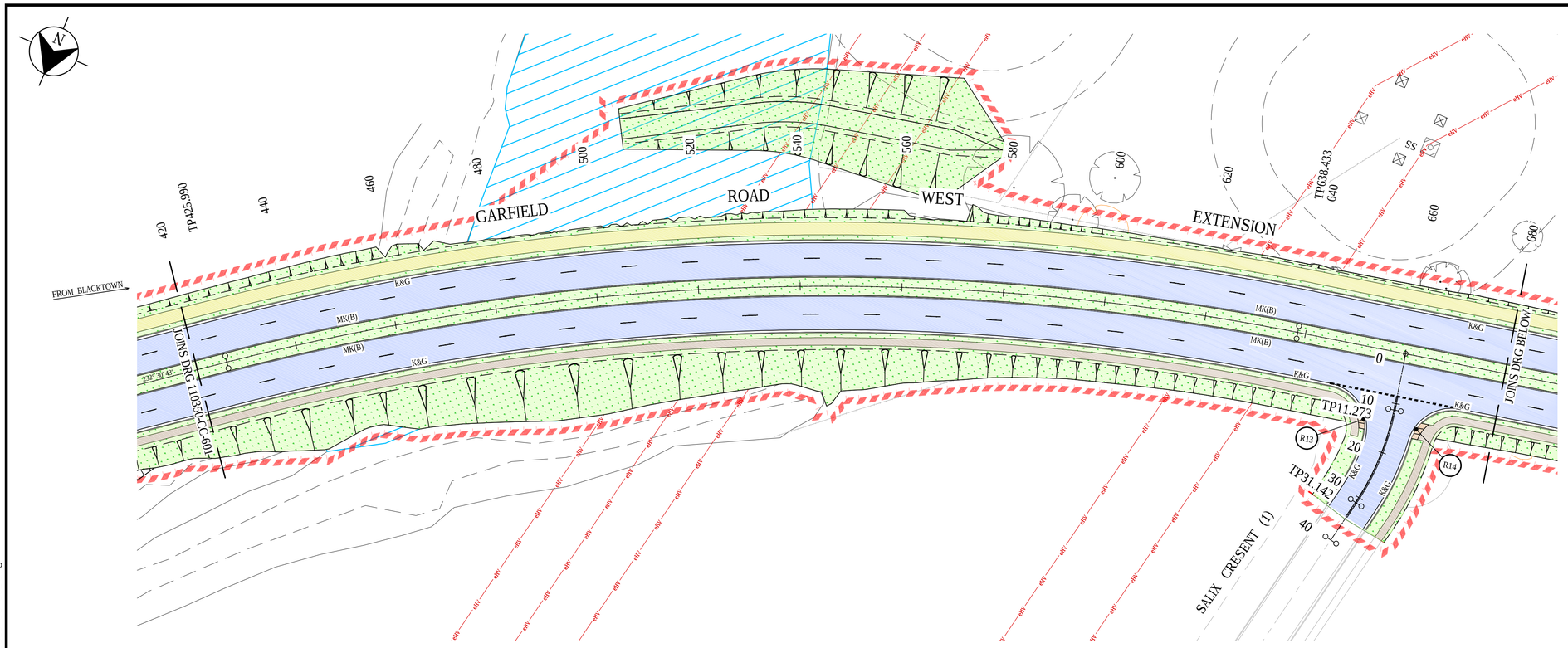
FOR CONSTRUCTION APPROVAL

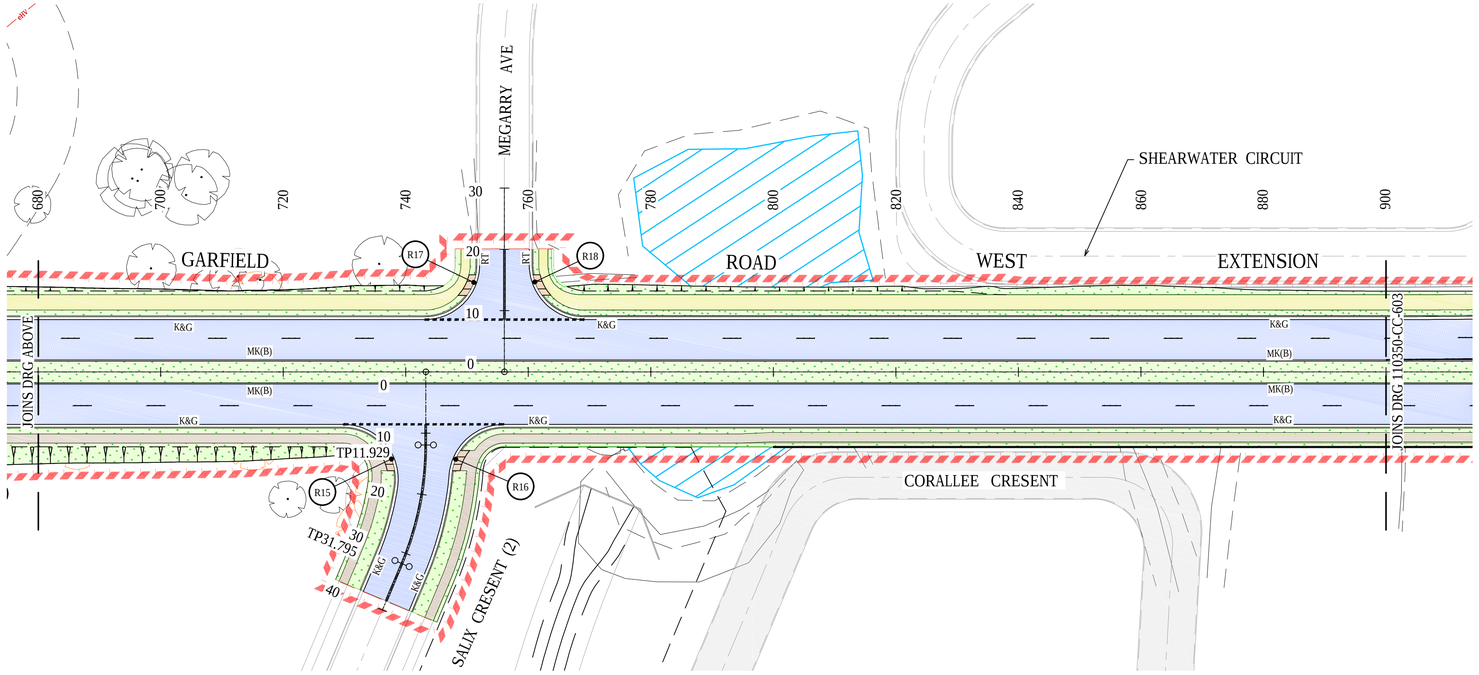
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PAVEMENT PLAN (SHEET 1 OF 4)

PLAN No: 110350-CC-601 E
FILE No: 110350-CC-601
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:03:21 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-601.dwg





NOTES

1. FOR GENERAL NOTES AND STANDARD DRAWINGS REFER TO CC-003
2. FOR PAVEMENT AND KERB INTERFACE DETAILS REFER TO PLAN NO. CC-009
3. EXISTING KERB AND GUTTER, FOOTPATH AND ROAD PAVEMENT ARE TO BE RETAINED WHERE NOT IMPACTED BY THE ROADWORKS.
4. LOCATION OF SAWCUT LINES AND NEW PAVEMENT WORKS TO BE CONFIRMED BY COUNCILS ENGINEER.
5. ALL KERBS, FOOTPATHS AND ROAD PAVEMENTS THAT ARE TO BE DEMOLISHED ARE TO BE SAW CUT TO ENSURE A CLEAN EDGE.
6. FOR SETTING OUT OF KERB RAMPS REFER TO 300 SERIES PLANS
7. NEW KERB TO MATCH EXISTING KERB FACE ALIGNMENT

PAVEMENT LEGEND

- NEW PAVEMENT (TYPE 1)
- BATHLA ROAD ROUNDABOUT (TYPE 2)
- NEW CONCRETE ANULUS (TYPE 3)
- NEW CONCRETE MEDIAN ISLAND (TYPE 4)
- NEW SHARED PATH (TYPE 5)
- NEW CONCRETE PATH/KERB RAMPS (TYPE 6)
- NEW FOOTWAY CROSSINGS (DRIVEWAYS) (TYPE 7)
- LANDSCAPE ZONE (TYPE 8)
- EXISTING PAVEMENT (TYPE 9)

KERB RAMP SCHEDULE

LABEL	TYPE	EASTING	NORTHING	COMMENTS
R13	R300.11	298398.192	6268969.803	NEW PEDESTRIAN RAMP
R14	R300.11	298387.931	6268967.649	NEW PEDESTRIAN RAMP
R15	R300.11	298316.744	6268952.696	NEW PEDESTRIAN RAMP
R16	R300.11	298306.517	6268950.547	NEW PEDESTRIAN RAMP
R17	R300.11	298309.533	6268921.481	NEW PEDESTRIAN RAMP
R18	R300.11	298299.840	6268919.457	NEW PEDESTRIAN RAMP

1:500 (AT A1)
1:1000 (AT A3)
10 0 10 20 30 40 50
METRES

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/22
	AMENDMENT	DES	DRN	CKD	APR	DATE

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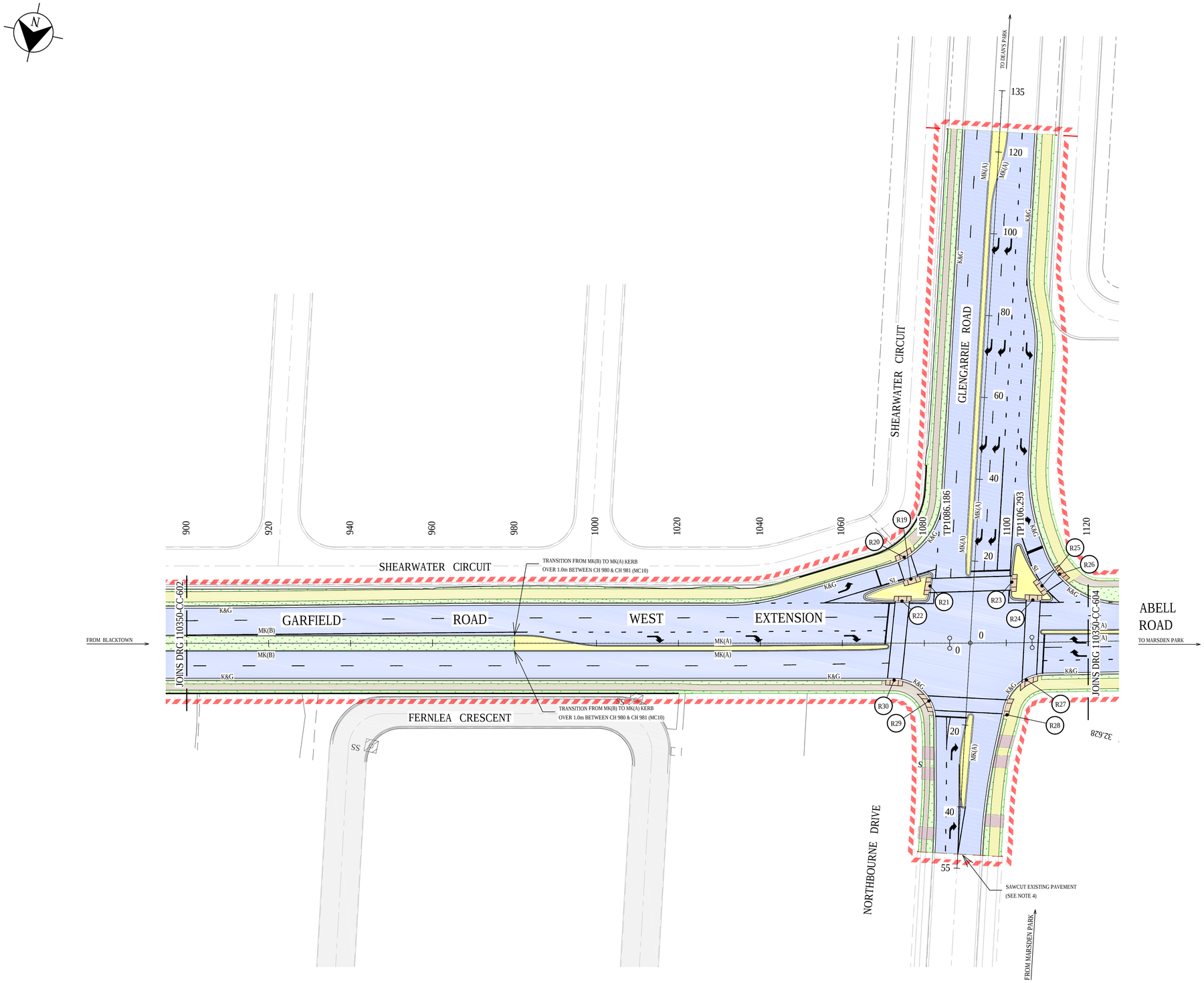
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PAVEMENT PLAN (SHEET 2 OF 4)

PLAN No: 110350-CC-602 E
FILE No: 110350-CC-602
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:03:36 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-602.dwg



NOTES

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2. FOR PAVEMENT AND KERB INTERFACE DETAILS REFER TO PLAN NO. CC-009
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PAVEMENT LEGEND

- NEW PAVEMENT (TYPE 1)
- BATHLA ROAD ROUNDABOUT (TYPE 2)
- NEW CONCRETE ANULUS (TYPE 3)
- NEW CONCRETE MEDIAN ISLAND (TYPE 4)
- NEW SHARED PATH (TYPE 5)
- NEW CONCRETE PATH/KERB RAMPS (TYPE 6)
- NEW FOOTWAY CROSSINGS (DRIVEWAYS) (TYPE 7)
- LANDSCAPE ZONE (TYPE 8)
- EXISTING PAVEMENT (TYPE 9)

KERB RAMP SCHEDULE

LABEL	TYPE	EASTING	NORTHING	COMMENTS
R19	R300.11	297991.032	6268853.645	NEW PEDESTRIAN RAMP
R20	R300.11	297993.766	6268848.870	NEW PEDESTRIAN RAMP
R21	R300.11	297986.164	6268854.294	NEW PEDESTRIAN RAMP
R22	R300.11	297992.005	6268859.406	NEW PEDESTRIAN RAMP
R23	R300.11	297966.801	6268849.595	NEW PEDESTRIAN RAMP
R24	R300.11	297960.795	6268852.558	NEW PEDESTRIAN RAMP
R25	R300.11	297959.329	6268848.785	NEW PEDESTRIAN RAMP
R26	R300.11	297955.734	6268845.107	NEW PEDESTRIAN RAMP
R27	R300.11	297957.903	6268871.619	NEW PEDESTRIAN RAMP
R28	R300.11	297962.095	6268879.454	NEW PEDESTRIAN RAMP
R29	R300.11	297980.388	6268882.239	NEW PEDESTRIAN RAMP
R30	R300.11	297989.956	6268878.660	NEW PEDESTRIAN RAMP

1:500 (AT A1)
1:1000 (AT A3)
10 0 10 20 30 40 50
METRES

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/22
	AMENDMENT	DES	DRN	CKD	APR	DATE

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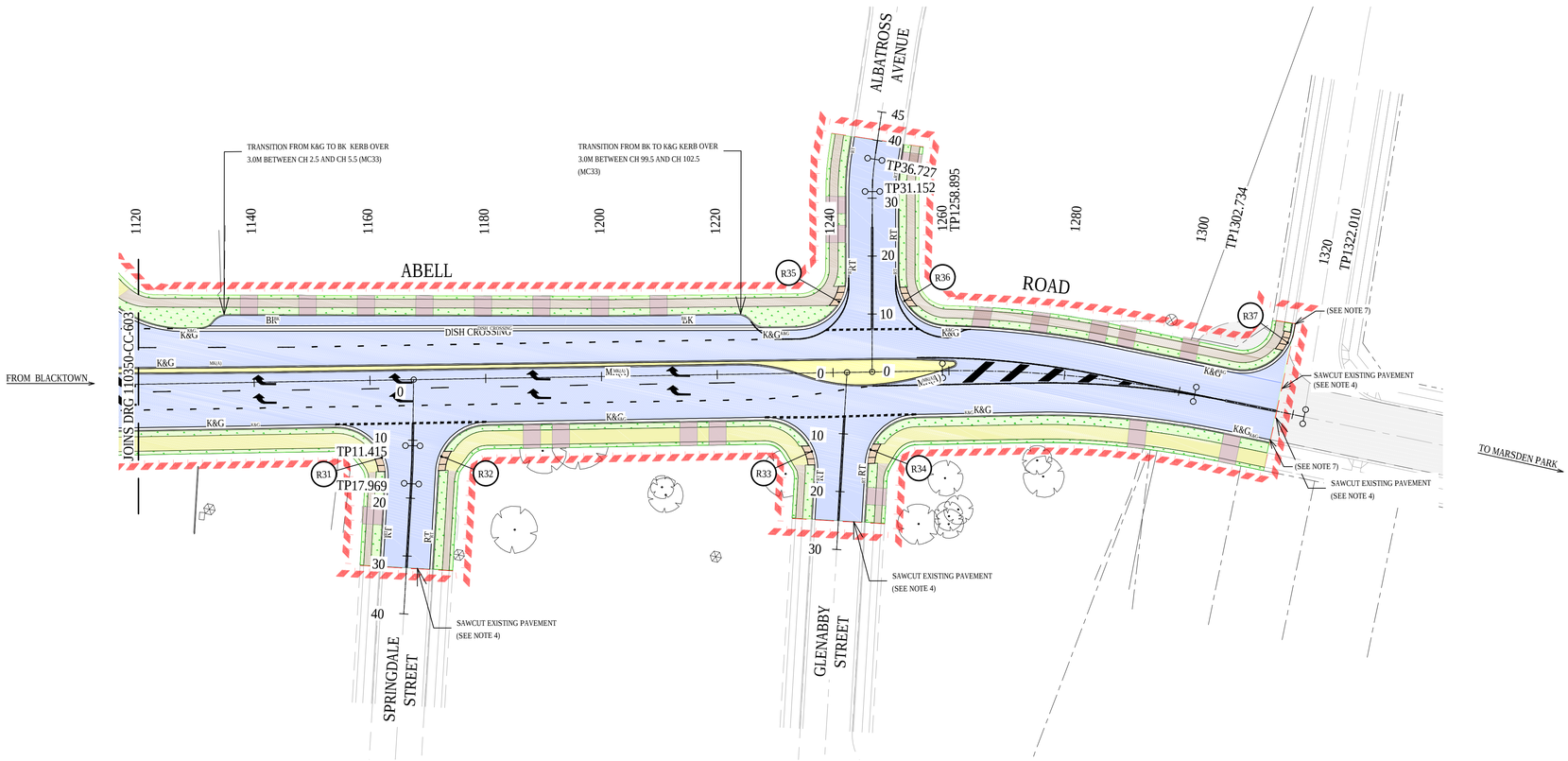
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PAVEMENT PLAN (SHEET 3 OF 4)

PLAN No: 110350-CC-603 E
FILE No: 110350-CC-603
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:03:48 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-603.dwg



NOTES

1. FOR GENERAL NOTES AND STANDARD DRAWINGS REFER TO CC-003
2. FOR PAVEMENT AND KERB INTERFACE DETAILS REFER TO PLAN NO. CC-009
3. EXISTING KERB AND GUTTER, FOOTPATH AND ROAD PAVEMENT ARE TO BE RETAINED WHERE NOT IMPACTED BY THE ROADWORKS.
4. LOCATION OF SAWCUT LINES AND NEW PAVEMENT WORKS TO BE CONFIRMED BY COUNCILS ENGINEER.
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7. NEW KERB TO MATCH EXISTING KERB FACE ALIGNMENT

PAVEMENT LEGEND

- NEW PAVEMENT (TYPE 1)
- BATHLA ROAD ROUNDABOUT (TYPE 2)
- NEW CONCRETE ANULUS (TYPE 3)
- NEW CONCRETE MEDIAN ISLAND (TYPE 4)
- NEW SHARED PATH (TYPE 5)
- NEW CONCRETE PATH/KERB RAMPS (TYPE 6)
- NEW FOOTWAY CROSSINGS (DRIVEWAYS) (TYPE 7)
- LANDSCAPE ZONE (TYPE 8)
- EXISTING PAVEMENT (TYPE 9)

KERB RAMP SCHEDULE

LABEL	TYPE	EASTING	NORTHING	COMMENTS
R31	R300.11	297901.723	6268863.669	NEW PEDESTRIAN RAMP
R32	R300.11	297891.896	6268861.427	NEW PEDESTRIAN RAMP
R33	R300.11	297829.297	6268847.312	NEW PEDESTRIAN RAMP
R34	R300.11	297819.561	6268844.999	NEW PEDESTRIAN RAMP
R35	R300.11	297829.898	6268820.775	NEW PEDESTRIAN RAMP
R36	R300.11	297819.134	6268818.370	NEW PEDESTRIAN RAMP
R37	R300.11	297752.854	6268811.852	NEW PEDESTRIAN RAMP

1:500 (AT A1)
1:1000 (AT A3)
10 0 10 20 30 40 50
METRES

E	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
C	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/22
	AMENDMENT	DES	DRN	CKD	APR	DATE

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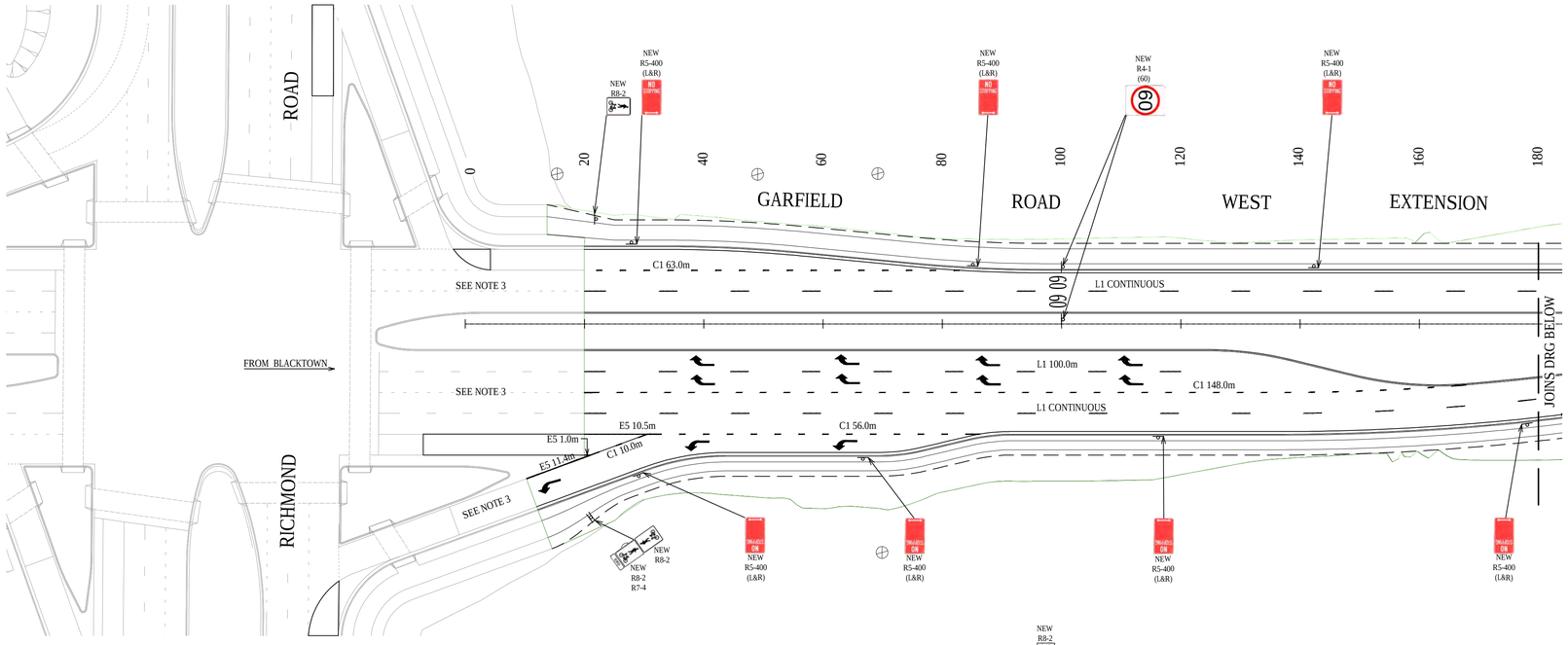
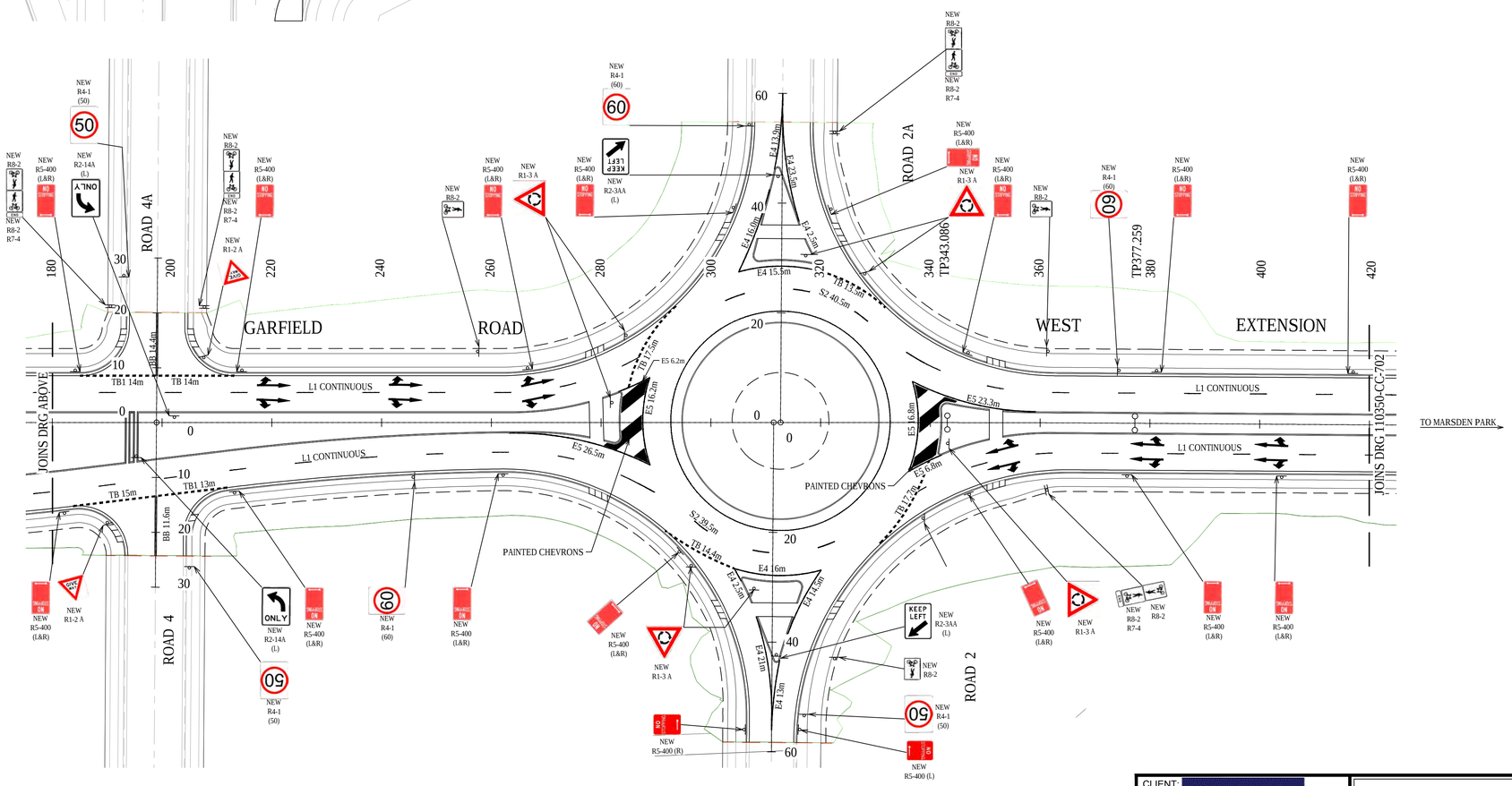
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

PAVEMENT PLAN (SHEET 4 OF 4)

PLAN No: 110350-CC-604 E
FILE No: 110350-CC-604
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:04:00 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-604.dwg



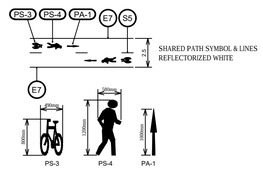


1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

PAVEMENT MARKING SCHEDULE

DIVIDING (BARRIER) LINES			
BB	BARRIER LINE WHERE SIGHT IS RESTRICTED IN BOTH DIRECTIONS OR APPROACH TO MEDIAN ISLAND/PEDESTRIAN CROSSING	0.10m 0.10m 0.10m	REFLECTORISED WHITE TYPE 'YY' PAVEMENT MARKERS BI-DIRECTIONAL REFLECTIVE YELLOW
TURNING, STOP & GIVE WAY LINES			
TB	GIVE WAY LINE (USED WITH SIGNS)	0.6b 0.6b 0.30m	REFLECTORISED WHITE
TF	STOP LINE AT TRAFFIC SIGNALS	0.30m (<80km/h)	REFLECTORISED WHITE
LANE LINES			
L1	LANE LINE ON MULTI LANE ROAD INCLUDING MOTORWAYS & DUAL CARRIAGEWAYS	3 9 0.10m	REFLECTORISED WHITE TYPE 'W' PAVEMENT MARKERS MONO-DIRECTIONAL REFLECTIVE WHITE
L3	LANE LINE ON MULTI LANE ROAD	0.10m	REFLECTORISED WHITE
CONTINUITY LINE			
C1	DEFINES EDGES OF THROUGH CARRIAGEWAY TO TURNING LANE, FREEWAY RAMP, BUS BAY AND START OR FINISH OF AUXILIARY LANE	1 3 1 0.15m	REFLECTORISED WHITE TYPE 'W' PAVEMENT MARKERS MONO-DIRECTIONAL REFLECTIVE YELLOW
EDGE LINES			
E4	OUTLINE OF TRAFFIC ISLAND	0.15m	REFLECTORISED WHITE
E5	OUTLINE OF PAINTED MEDIAN	0.15m	REFLECTORISED WHITE
E6	LINE APPLIED TO INCLINE FACE OF MEDIAN KERB	0.15m	REFLECTORISED WHITE
PEDESTRIAN CROSS WALK LINES			
PCW	PEDESTRIAN CROSS WALK LINES	3 0.15m 0.3	REFLECTORISED WHITE



TYPICAL SHARED PATH PAVEMENT MARKING ARRANGEMENT
N.T.S.

F	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
E	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
C	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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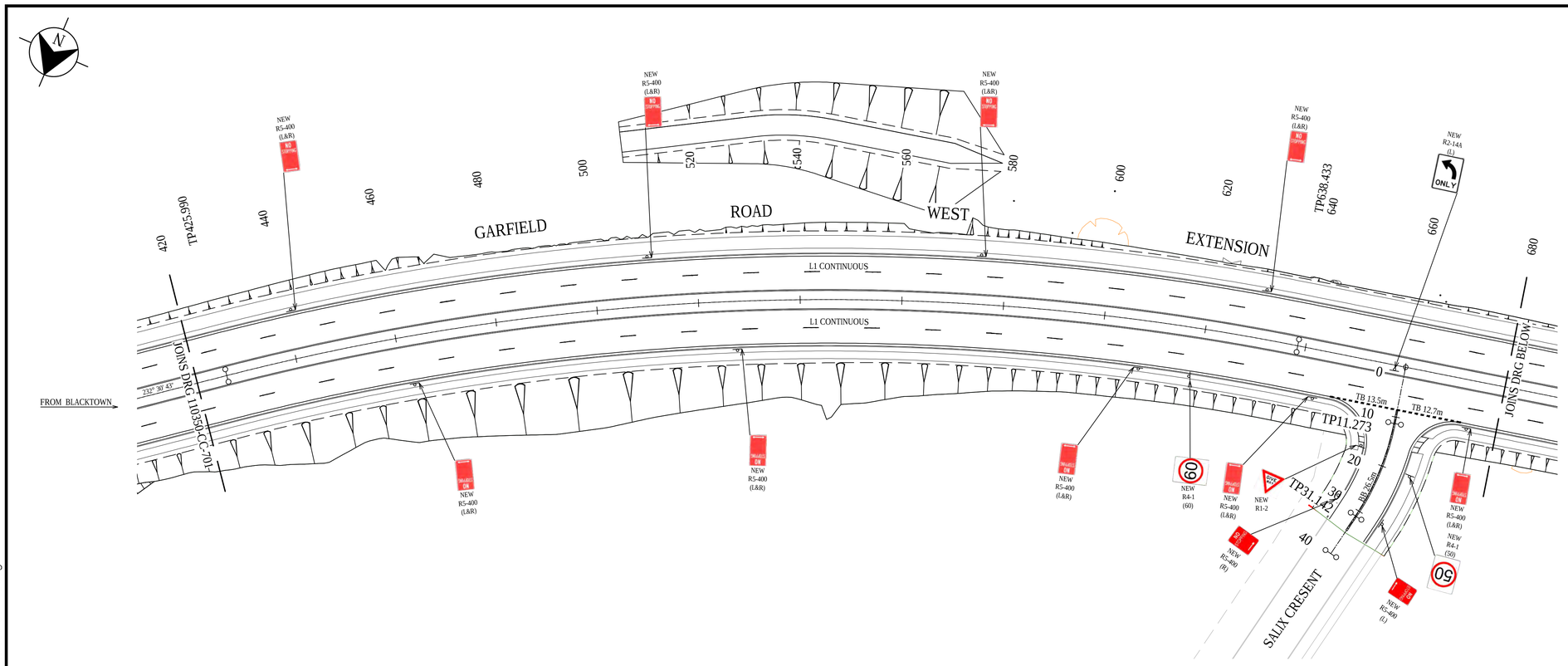
FOR CONSTRUCTION APPROVAL

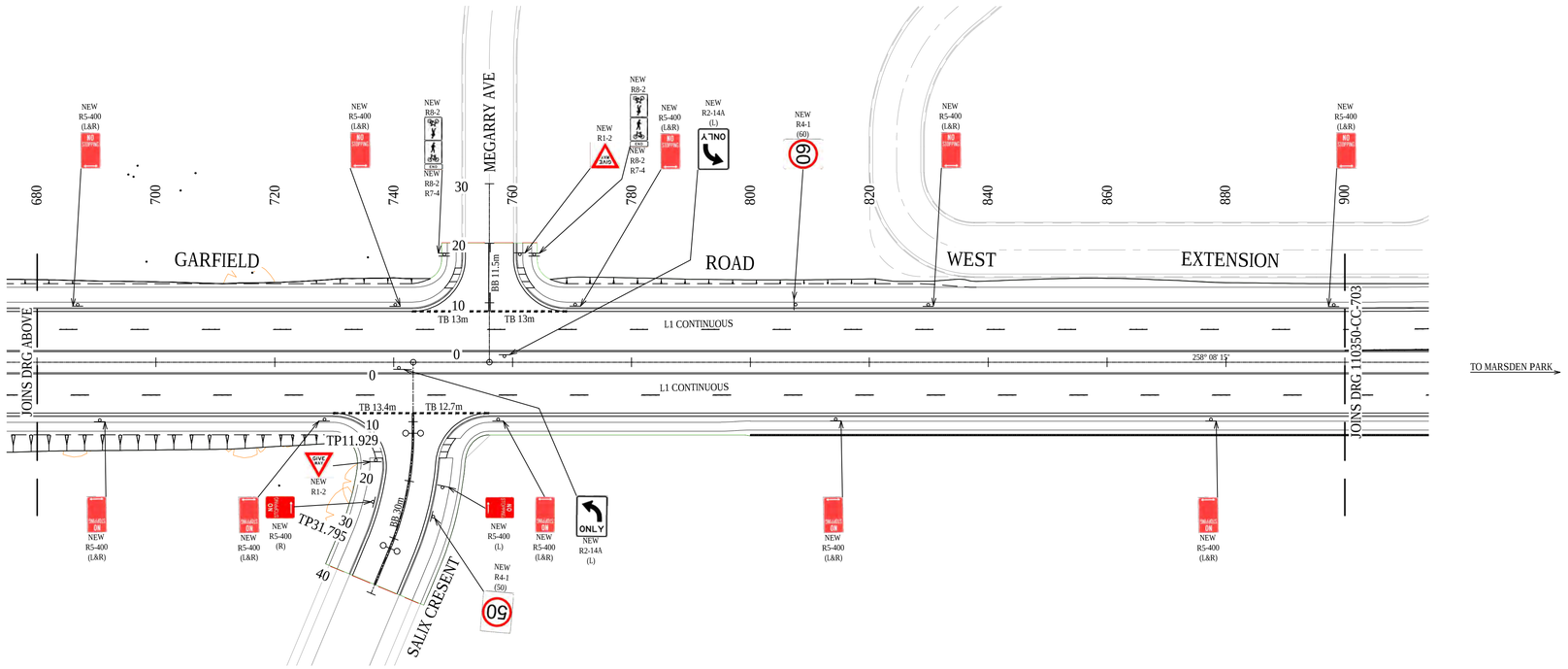
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

LINEMARKING AND SIGNAGE PLAN (SHEET 1 OF 4)

PLAN No: 110350-CC-701 F
FILE No: 110350-CC-701
SHEET SIZE: A1 ORIGINAL

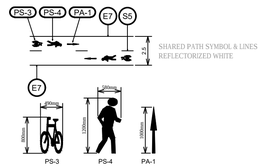
Plotted: 15 February, 2019 10:23:55 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-701.dwg





PAVEMENT MARKING SCHEDULE

DIVIDING (BARRIER) LINES			
BB	BARRIER LINE WHERE SIGHT IS RESTRICTED IN BOTH DIRECTIONS OR APPROACH TO MEDIAN ISLAND/PEDESTRIAN CROSSING	0.10m 0.10m 0.10m	REFLECTORISED WHITE TYPE 'YY' PAVEMENT MARKERS BI-DIRECTIONAL REFLECTIVE YELLOW
TURNING, STOP & GIVE WAY LINES			
TB	GIVE WAY LINE (USED WITH SIGNS)	0.60 0.60 0.30m	REFLECTORISED WHITE
TF	STOP LINE AT TRAFFIC SIGNALS	0.30m (<80km/h)	REFLECTORISED WHITE
LANE LINES			
L1	LANE LINE ON MULTI LANE ROAD INCLUDING MOTORWAYS & DUAL CARRIAGEWAYS	3 9 0.10m	REFLECTORISED WHITE TYPE 'W' PAVEMENT MARKERS MONO-DIRECTIONAL REFLECTIVE WHITE
L3	LANE LINE ON MULTI LANE ROAD	0.10m	REFLECTORISED WHITE
CONTINUITY LINE			
C1	DEFINES EDGES OF THROUGH CARRIAGEWAY TO TURNING LANE, FREEWAY RAMP, BUS BAY AND START OR FINISH OF AUXILIARY LANE	1 3 1 0.15m	REFLECTORISED WHITE TYPE 'W' PAVEMENT MARKERS MONO-DIRECTIONAL REFLECTIVE YELLOW
EDGE LINES			
E4	OUTLINE OF TRAFFIC ISLAND	0.15m	REFLECTORISED WHITE
E5	OUTLINE OF PAINTED MEDIAN	0.15m	REFLECTORISED WHITE
E6	LINE APPLIED TO INCLINE FACE OF MEDIAN KERB	0.15m	REFLECTORISED WHITE
PEDESTRIAN CROSS WALK LINES			
PCW	PEDESTRIAN CROSS WALK LINES	3 0.15m 0.3	REFLECTORISED WHITE



TYPICAL SHARED PATH PAVEMENT MARKING ARRANGEMENT
N.T.S.

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

F	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
E	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
C	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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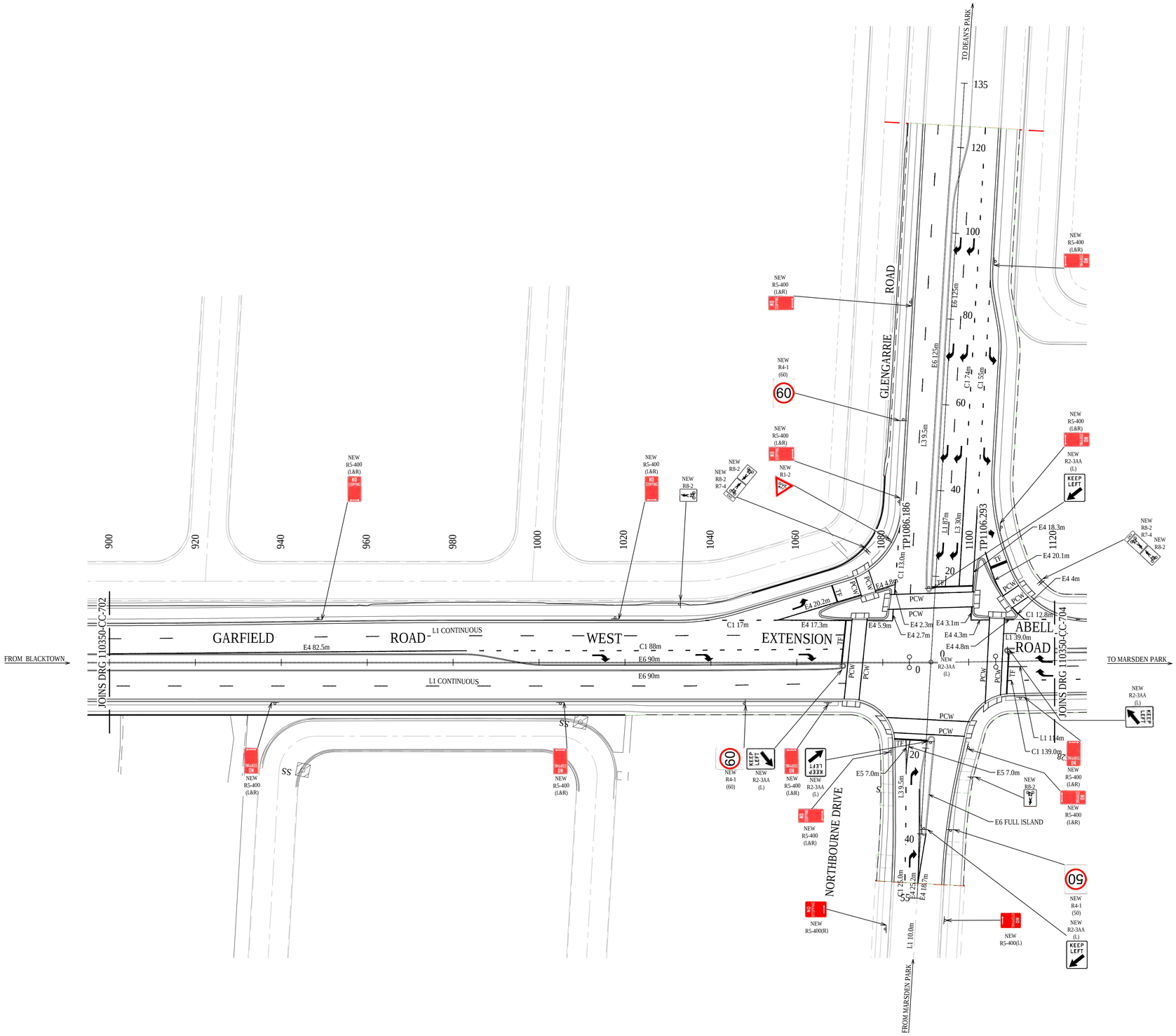
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

LINEMARKING AND SIGNAGE PLAN (SHEET 2 OF 4)

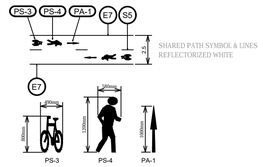
PLAN No: 110350-CC-702 F
FILE No: 110350-CC-702
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:24:12 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-702.dwg



PAVEMENT MARKING SCHEDULE

DIVIDING (BARRIER) LINES			
BB	BARRIER LINE WHERE SIGHT IS RESTRICTED IN BOTH DIRECTIONS OR APPROACH TO MEDIAN ISLAND/PEDESTRIAN CROSSING	0.10m	REFLECTORISED WHITE TYPE 'YY' PAVEMENT MARKERS BI-DIRECTIONAL REFLECTIVE YELLOW
TURNING, STOP & GIVE WAY LINES			
TB	GIVE WAY LINE (USED WITH SIGNS)	0.60 0.60 0.30m	REFLECTORISED WHITE
TF	STOP LINE AT TRAFFIC SIGNALS	0.30m (<80km/h)	REFLECTORISED WHITE
LANE LINES			
L1	LANE LINE ON MULTI LANE ROAD INCLUDING MOTORWAYS & DUAL CARRIAGEWAYS	3 9 0.10m	REFLECTORISED WHITE TYPE 'W' PAVEMENT MARKERS MONO-DIRECTIONAL REFLECTIVE WHITE
L3	LANE LINE ON MULTI LANE ROAD	0.10m	REFLECTORISED WHITE
CONTINUITY LINE			
C1	DEFINES EDGES OF THROUGH CARRIAGEWAY TO TURNING LANE, FREEWAY RAMP, BUS BAY AND START OR FINISH OF AUXILIARY LANE	1 3 1 0.15m	REFLECTORISED WHITE TYPE 'W' PAVEMENT MARKERS MONO-DIRECTIONAL REFLECTIVE YELLOW
EDGE LINES			
E4	OUTLINE OF TRAFFIC ISLAND	0.15m	REFLECTORISED WHITE
E5	OUTLINE OF PAINTED MEDIAN	0.15m	REFLECTORISED WHITE
E6	LINE APPLIED TO INCLINE FACE OF MEDIAN KERB	0.15m	REFLECTORISED WHITE
PEDESTRIAN CROSS WALK LINES			
PCW	PEDESTRIAN CROSS WALK LINES	3 0.15m 0.3	REFLECTORISED WHITE



TYPICAL SHARED PATH PAVEMENT MARKING ARRANGEMENT
N.T.S.

F	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
E	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
C	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

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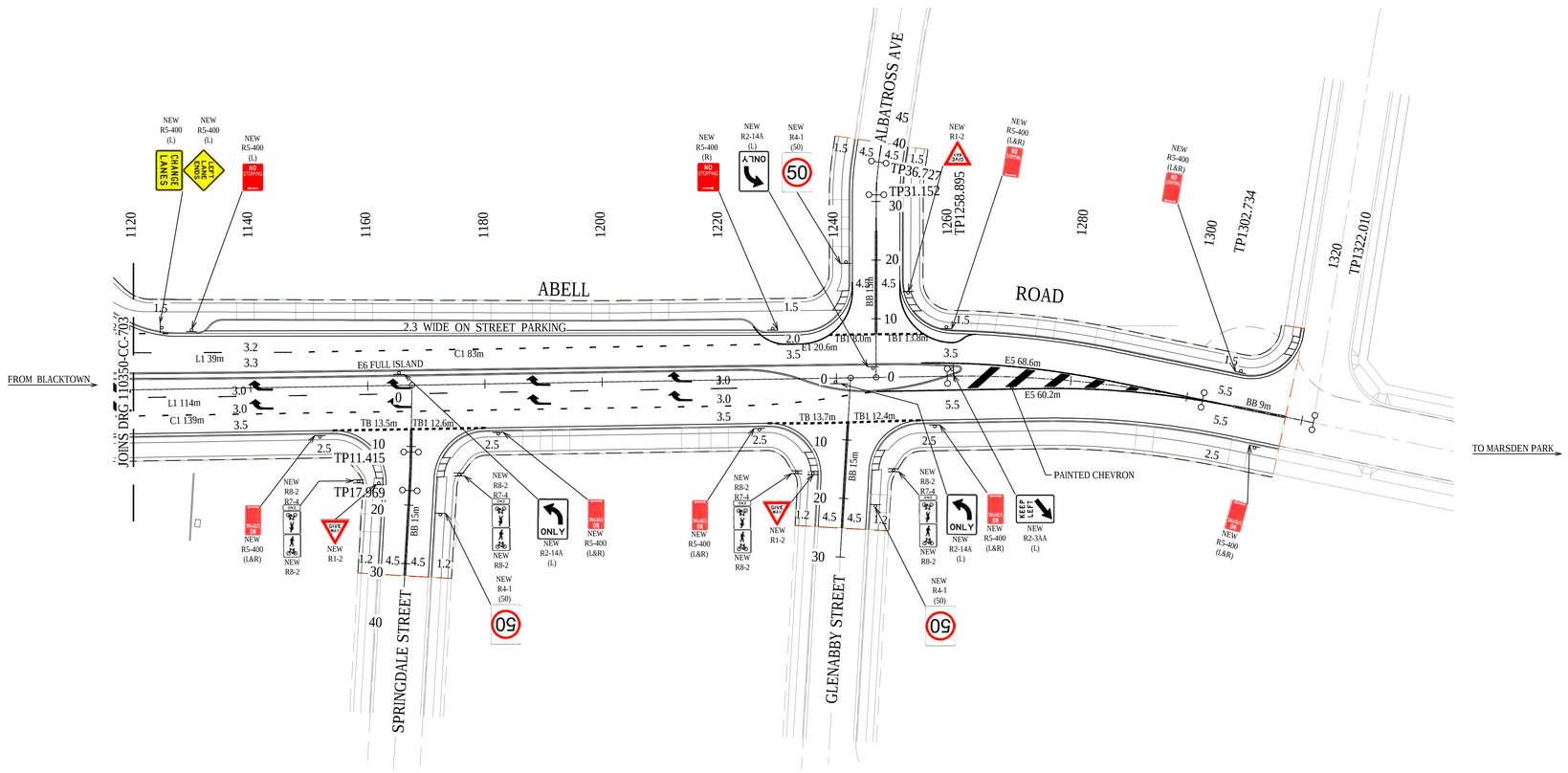
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

LINEMARKING AND SIGNAGE PLAN (SHEET 3 OF 4)

PLAN No: 110350-CC-703 F
FILE No: 110350-CC-703
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:24:27 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT1\CC\110350-CC-703.dwg



PAVEMENT MARKING SCHEDULE

DIVIDING (BARRIER) LINES			
BB	BARRIER LINE WHERE SIGHT IS RESTRICTED IN BOTH DIRECTIONS OR APPROACH TO MEDIAN ISLAND/PEDESTRIAN CROSSING	0.10m	REFLECTORISED WHITE TYPE 'YY' PAVEMENT MARKERS BI-DIRECTIONAL REFLECTIVE YELLOW
TURNING, STOP & GIVE WAY LINES			
TB	GIVE WAY LINE (USED WITH SIGNS)	0.60 0.90 0.30m	REFLECTORISED WHITE
TF	STOP LINE AT TRAFFIC SIGNALS	0.30m (<80km/h)	REFLECTORISED WHITE
LANE LINES			
L1	LANE LINE ON MULTI LANE ROAD INCLUDING MOTORWAYS & DUAL CARRIAGEWAYS	3 9 0.10m	REFLECTORISED WHITE TYPE 'W' PAVEMENT MARKERS MONO-DIRECTIONAL REFLECTIVE WHITE
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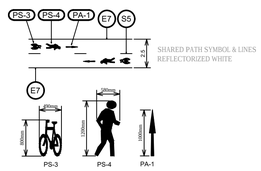
PEDESTRIAN CROSS WALK LINES			
PCW	PEDESTRIAN CROSS WALK LINES	3 0.15m 0.3	REFLECTORISED WHITE



TYPICAL SHARED PATH PAVEMENT MARKING ARRANGEMENT
N.T.S.

1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

F	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
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D	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
C	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
B	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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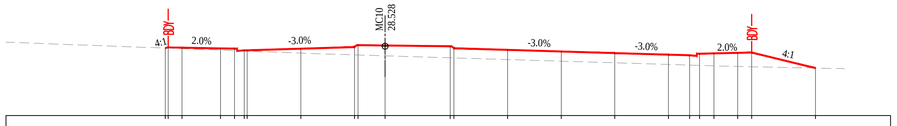
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

LINEMARKING AND SIGNAGE PLAN (SHEET 4 OF 4)

PLAN No: 110350-CC-704 F
FILE No: 110350-CC-704
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:24:40 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-704.dwg



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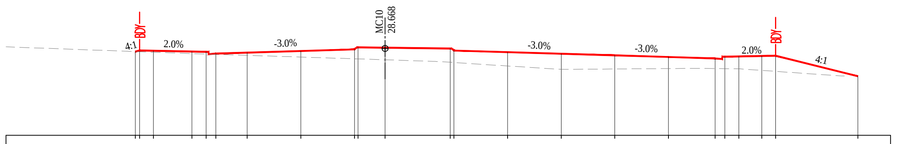
DESIGN LEVELS	28.403	28.432	28.381	28.362	28.258	28.363	28.468	28.598	28.528	28.523	28.393	28.288	28.183	28.078	27.973	27.932	28.042	28.060	28.090	28.108	27.095
EXISITNG LEVELS	28.403	28.363	28.270	28.231	28.206	28.077	27.959	27.952	27.898	27.768	27.761	27.655	27.549	27.442	27.336	27.294	27.274	27.246	27.207	27.187	27.095
DESIGN OFFSETS	-14.350	-13.256	-10.749	-9.827	-9.000	-5.500	-2.000	-1.760	-0.000	4.260	4.500	8.000	11.500	15.000	18.500	19.885	20.532	21.477	23.019	23.943	28.104

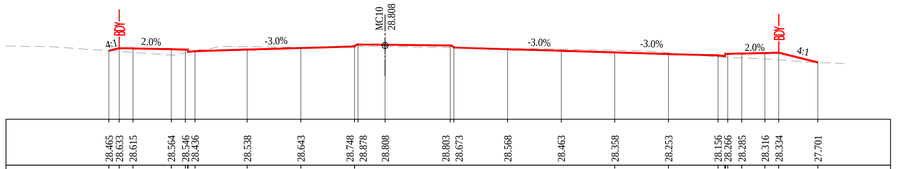
80.000



DATUM RL=23.000

DESIGN LEVELS	28.466	28.516	28.465	28.447	28.336	28.398	28.503	28.608	28.738	28.668	28.663	28.533	28.428	28.323	28.218	28.113	28.022	28.132	28.150	28.180	28.198	26.856
EXISITNG LEVELS	28.466	28.423	28.332	28.299	28.284	28.219	28.108	27.996	27.989	27.932	27.765	27.750	27.527	27.305	27.330	27.356	27.362	27.353	27.335	27.238	27.175	26.856
DESIGN OFFSETS	-16.304	-15.122	-12.611	-11.686	-11.053	-9.000	-5.500	-2.000	-1.760	-0.000	4.260	4.500	8.000	11.500	15.000	18.500	21.550	22.180	23.100	24.600	25.500	30.867

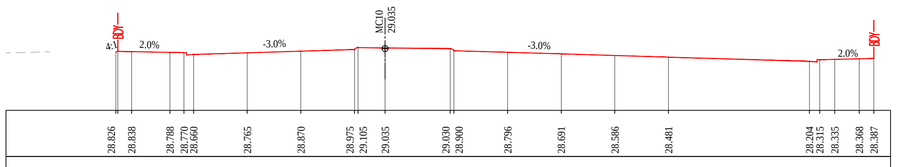
60.000



DATUM RL=24.000

DESIGN LEVELS	28.465	28.633	28.615	28.564	28.546	28.456	28.538	28.643	28.748	28.878	28.808	28.803	28.673	28.568	28.463	28.358	28.253	28.156	28.271	28.285	28.316	28.334	27.701
EXISITNG LEVELS	28.465	28.419	28.358	28.196	28.157	28.472	28.731	28.701	28.764	28.764						28.494	28.340	28.064	28.036	27.996	27.930	27.879	27.701
DESIGN OFFSETS	-18.033	-17.362	-16.462	-13.961	-13.340	-12.410	-9.000	-5.500	-2.000	-1.760	-0.000	4.260	4.500	8.000	11.500	15.000	18.500	21.738	22.571	23.295	24.801	25.705	28.261

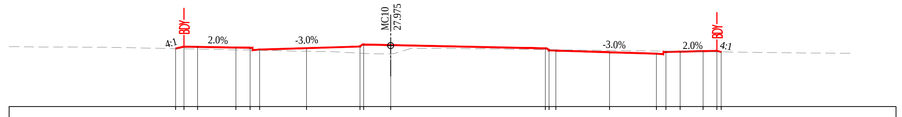
40.000



DATUM RL=25.000

DESIGN LEVELS	28.826	28.838	28.798	28.770	28.660	28.765	28.870	28.975	29.105	29.035	29.030	28.900	28.796	28.691	28.586	28.481	28.204	28.315	28.335	28.368	28.387
EXISITNG LEVELS																					
DESIGN OFFSETS	-17.572	-16.550	-14.050	-13.170	-12.500	-9.000	-5.500	-2.000	-1.760	-0.000	4.260	4.500	8.000	11.500	15.000	18.500	27.706	28.377	29.358	30.956	31.915

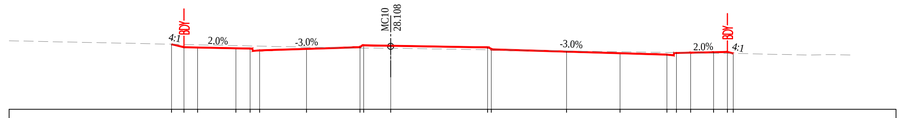
20.000



DATUM RL=24.000

DESIGN LEVELS	27.780	27.915	27.897	27.847	27.829	27.719	27.810	27.915	28.045	27.975	27.795	27.652	27.547	27.455	27.565	27.584	27.614	27.562		
EXISITNG LEVELS	27.780	27.770	27.752	27.704	27.684	27.677	27.610	27.483	27.470	27.447	27.715	27.706	27.661	27.621	27.613	27.601	27.581	27.566		
DESIGN OFFSETS	-14.040	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	10.104	10.784	14.290	17.346	17.977	18.899	20.401	21.586		

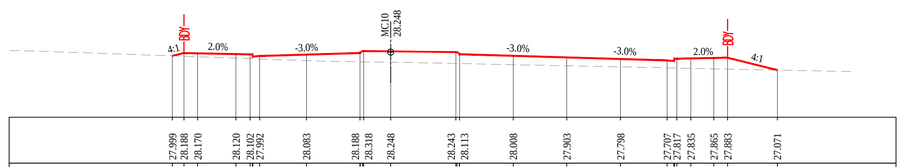
160.000



DATUM RL=24.000

DESIGN LEVELS	28.249	28.048	28.030	27.980	27.962	27.852	27.943	28.048	28.178	28.108	28.042	27.911	27.764	27.659	27.567	27.677	27.696	27.726	27.646	
EXISITNG LEVELS	28.249	28.231	28.212	28.157	28.134	28.123	28.057	27.994	27.998	27.984	27.888	27.885	27.811	27.758	27.712	27.702	27.688	27.666	27.646	
DESIGN OFFSETS	-14.304	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	6.327	6.574	11.482	14.982	18.032	18.663	19.583	21.083	22.374	

140.000



DATUM RL=24.000

DESIGN LEVELS	27.999	28.188	28.170	28.120	28.102	27.992	28.083	28.188	28.318	28.248	28.243	28.113	28.008	27.903	27.798	27.707	27.817	27.835	27.865	27.883	27.071
EXISITNG LEVELS	27.999	27.973	27.941	27.853	27.815	27.798	27.690	27.616	27.613	27.588	27.502	27.497	27.426	27.354	27.282	27.219	27.206	27.187	27.157	27.138	27.071
DESIGN OFFSETS	-14.254	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	4.260	4.500	8.000	11.500	15.000	18.050	18.680	19.600	21.100	22.000	25.247

120.000

DATUM RL=23.000

DESIGN LEVELS	28.148	28.328	28.310	28.260	28.242	28.132	28.223	28.328	28.458	28.388	28.383	28.253	28.148	28.043	27.938	27.847	27.957	27.975	28.005	28.023	26.916
EXISITNG LEVELS	28.148	28.120	28.086	27.990	27.949	27.930	27.818	27.719	27.713	27.670	27.550	27.543	27.441	27.339	27.237	27.148	27.129	27.103	27.059	27.033	26.916
DESIGN OFFSETS	-14.221	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	4.260	4.500	8.000	11.500	15.000	18.050	18.680	19.600	21.100	22.000	26.429

100.000

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GARFIELD RD WEST CH 20 TO CH160

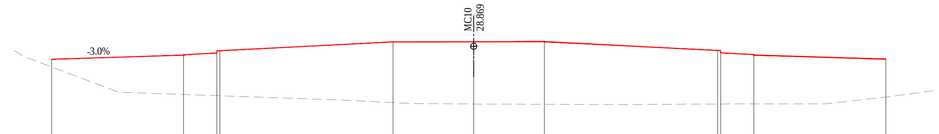
PLAN No: 110350-CC-800 H
FILE No: 110350-CC-800
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:05:09 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-800.dwg

DATUM RL=24.000

DESIGN LEVELS	30.219	28.023	28.005	27.955	27.937	27.927	27.918	28.023	28.153	28.083	28.133	28.003	27.898	27.806	27.916	27.933	27.962	27.980	29.208
EXISITNG LEVELS	30.219	30.056	30.040	29.993	29.974	29.965	29.908	29.843	29.839	29.806	29.735	29.726	29.596	29.465	29.465	29.436	29.390	29.362	29.208
DESIGN OFFSETS	-22.285	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	2.434	2.675	6.181	9.237	9.668	10.790	12.293	13.194	18.128

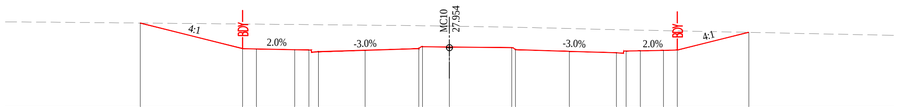
240.000



DATUM RL=22.000

DESIGN LEVELS	28.020	28.290	28.436	28.588	29.154	28.869	29.174	28.596	28.444	28.297	28.031
EXISITNG LEVELS	28.303	27.522	25.724	25.724	25.648	25.641	25.102	25.102	25.103	25.111	25.111	25.557	27.144
DESIGN OFFSETS	-27.558	-18.941	-16.775	-16.577	-5.265	-0.000	4.616	15.929	16.125	18.293	26.907

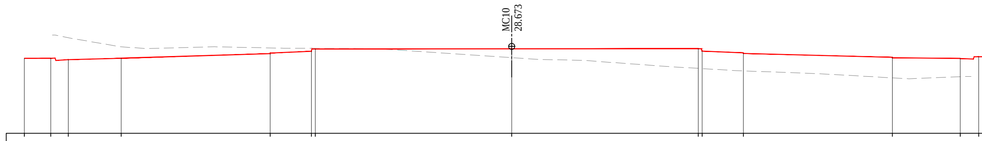
320.000



DATUM RL=24.000

DESIGN LEVELS	29.567	27.894	27.876	27.826	27.808	27.798	27.789	27.894	28.024	27.954	27.955	27.825	27.719	27.627	27.757	27.754	27.783	27.800	28.957
EXISITNG LEVELS	29.567	29.503	29.495	29.471	29.461	29.456	29.428	29.394	29.392	29.363	29.296	29.292	29.207	29.133	29.120	29.101	29.071	29.052	28.957
DESIGN OFFSETS	-20.192	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	4.075	4.317	7.836	10.903	11.158	12.461	13.970	14.875	19.547

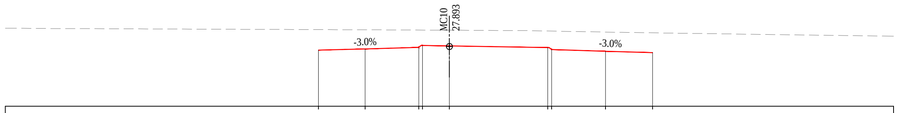
220.000



DATUM RL=23.000

DESIGN LEVELS	27.894	27.901	27.808	27.903	28.205	28.356	28.509	28.673	28.525	28.373	28.219	27.956	27.886	27.996	28.019
EXISITNG LEVELS	29.467	29.417	29.419	29.411	29.244	28.701	28.574	28.573	28.546	28.545	27.939	27.238	27.227	27.075	27.074	26.621	26.694	26.715	26.720	26.628
DESIGN OFFSETS	-31.828	-30.096	-28.957	-25.499	-15.776	-13.085	-12.825	-0.000	12.174	12.429	15.129	24.850	29.291	30.488	32.323

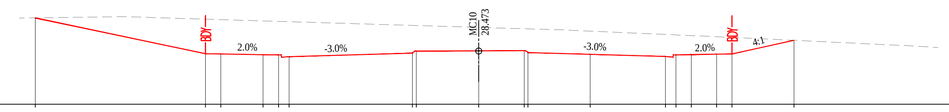
300.000



DATUM RL=24.000

DESIGN LEVELS	27.660	27.733	27.833	27.963	27.893	27.823	27.693	27.587	27.495
EXISITNG LEVELS	28.996	28.984	28.968	28.967	28.958	28.906	28.901	28.834	28.786
DESIGN OFFSETS	-8.550	-5.500	-2.000	-1.760	-0.000	6.426	6.668	10.193	13.265

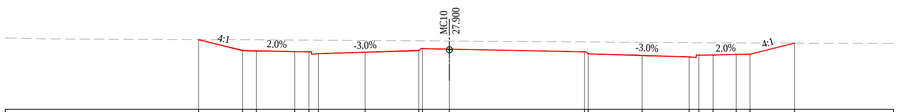
200.000



DATUM RL=25.000

DESIGN LEVELS	30.633	28.289	28.273	28.228	28.210	28.101	28.331	28.461	28.473	28.494	28.364	28.248	28.107	28.216	28.233	28.261	28.277	29.166
EXISITNG LEVELS	30.633	30.546	30.516	30.433	30.403	30.382	30.141	30.134	30.011	29.922	29.915	29.766	29.551	29.521	29.476	29.403	29.357	29.166
DESIGN OFFSETS	-28.959	-17.842	-16.838	-14.080	-13.072	-12.383	-4.336	-4.081	-0.000	2.971	3.217	7.271	12.187	12.875	13.882	15.536	16.535	20.585

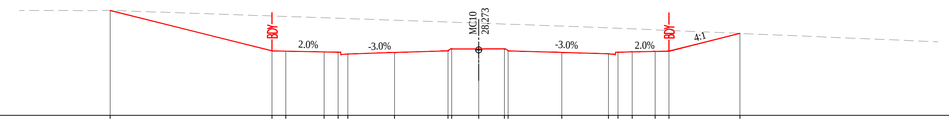
280.000



DATUM RL=24.000

DESIGN LEVELS	28.560	27.840	27.822	27.772	27.754	27.744	27.735	27.840	27.970	27.900	27.758	27.628	27.523	27.431	27.541	27.559	27.589	27.607	28.329
EXISITNG LEVELS	28.560	28.548	28.544	28.530	28.523	28.520	28.500	28.477	28.476	28.465	28.406	28.404	28.377	28.354	28.351	28.347	28.342	28.339	28.329
DESIGN OFFSETS	-16.378	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	8.822	9.063	12.585	15.654	16.288	17.213	18.722	19.627	22.536

180.000



DATUM RL=24.000

DESIGN LEVELS	30.855	28.213	28.195	28.145	28.126	28.016	28.108	28.213	28.343	28.273	28.347	28.216	28.111	28.019	28.129	28.147	28.177	28.195	29.354
EXISITNG LEVELS	30.855	30.492	30.461	30.376	30.339	30.322	30.218	30.098	30.090	30.028	29.968	29.960	29.835	29.716	29.690	29.651	29.589	29.551	29.354
DESIGN OFFSETS	-24.067	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	1.674	1.914	5.417	8.465	9.096	10.016	11.516	12.416	17.058

260.000

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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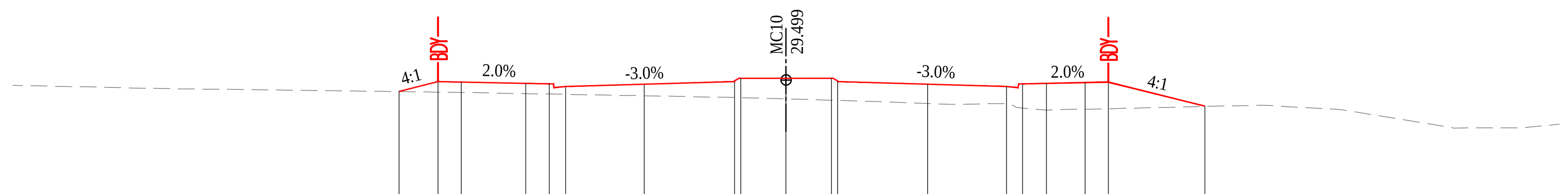
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GARFIELD RD WEST CH180 TO CH320

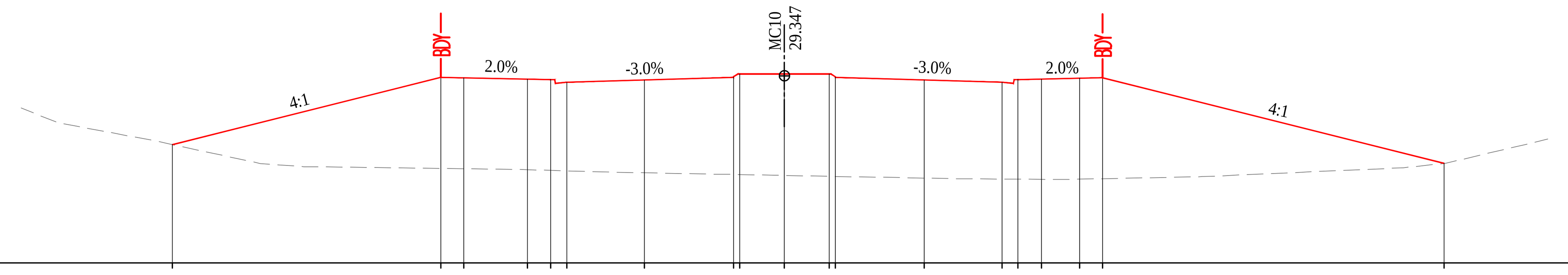
PLAN No: 110350-CC-801 H
FILE No: 110350-CC-801
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:05:17 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-801.dwg



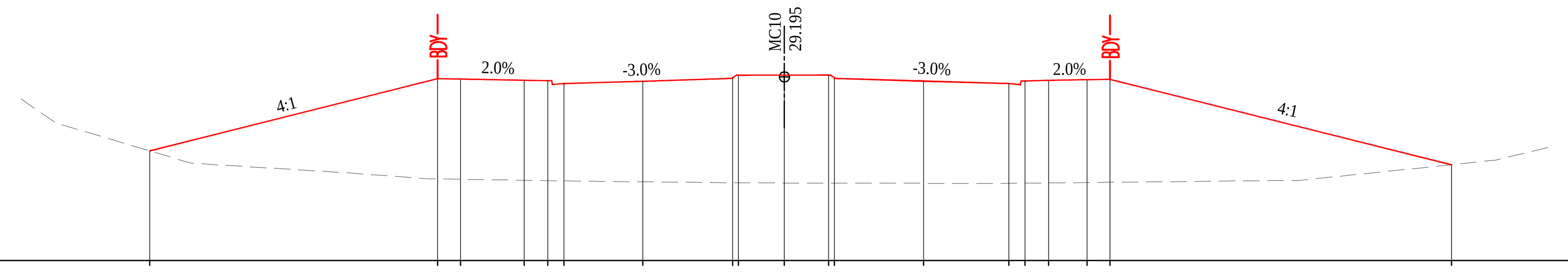
DESIGN LEVELS	29.061	29.439	29.421	29.371	29.352	29.342	29.334	29.439	29.569	29.499	29.569	29.439	29.334	29.242	29.352	29.371	29.401	29.419	28.482
EXISITNG LEVELS	29.061	29.040	29.024	28.981	28.962	28.953	28.897	28.832	28.826	28.775	28.724	28.717	28.594	28.598	28.420	28.342	28.375	28.391	28.482
DESIGN OFFSETS	-15.010	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.500	16.249

400.000



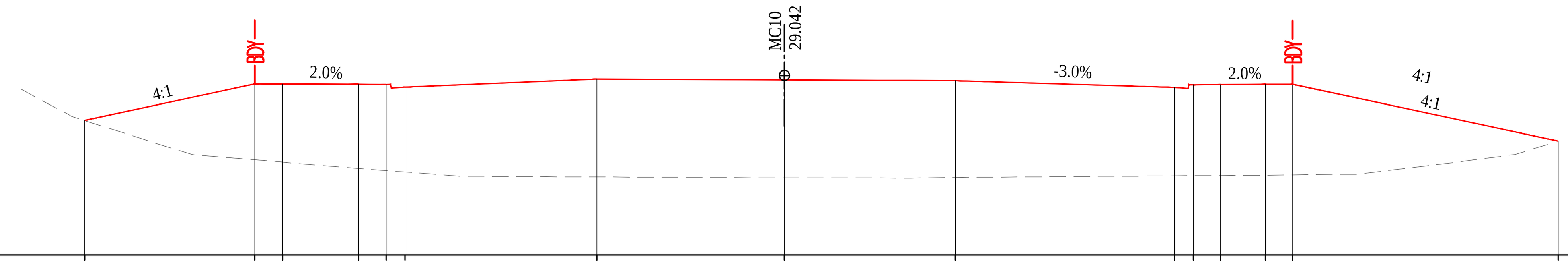
DESIGN LEVELS	26.646	29.287	29.269	29.219	29.200	29.090	29.182	29.287	29.417	29.347	29.417	29.287	29.182	29.090	29.200	29.219	29.249	29.267	25.908
EXISITNG LEVELS	26.646	25.707	25.695	25.662	25.628	25.612	25.540	25.472	25.467	25.434	25.401	25.396	25.331	25.293	25.290	25.285	25.290	25.308	25.908
DESIGN OFFSETS	-24.062	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.500	25.934

380.000



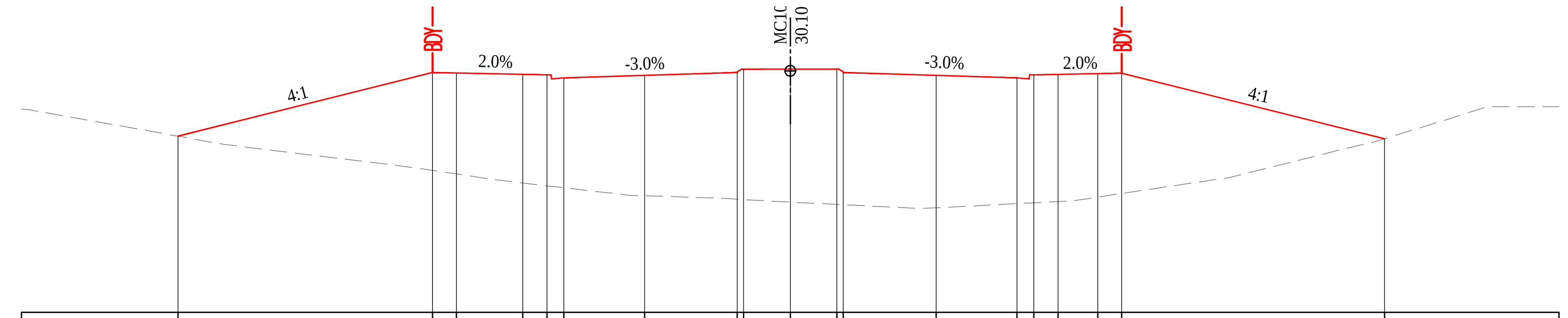
DESIGN LEVELS	26.295	29.128	29.111	29.062	29.045	28.935	29.028	29.135	29.265	29.195	29.266	29.136	29.031	28.930	29.040	29.057	29.085	29.102	25.751
EXISITNG LEVELS	26.295	25.193	25.180	25.142	25.126	25.119	25.080	25.043	25.040	25.035	25.032	25.031	25.024	25.023	25.029	25.039	25.054	25.063	25.751
DESIGN OFFSETS	-24.950	-13.629	-12.727	-10.221	-9.299	-8.667	-5.572	-2.042	-1.802	0.000	1.730	1.970	5.470	8.821	9.454	10.380	11.890	12.796	26.216

360.000



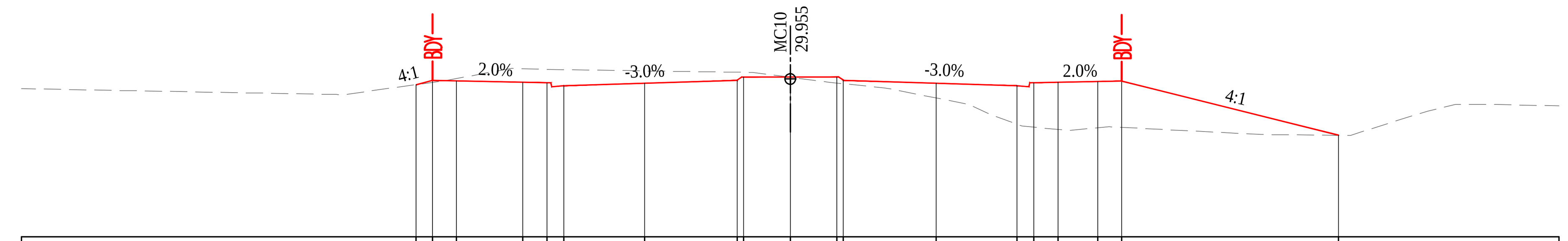
DESIGN LEVELS	27.276	28.711	28.710	28.700	28.695	28.593	28.909	29.042	28.844	28.581	28.683	28.689	28.697	28.703	26.467
EXISITNG LEVELS	27.276	25.734	25.643	25.398	25.315	25.259	25.062	25.028	25.045	25.107	25.112	25.120	25.133	25.145	26.467
DESIGN OFFSETS	-27.504	-20.820	-19.724	-16.737	-15.654	-14.919	-7.369	-0.000	6.713	15.241	16.073	17.142	18.906	19.977	30.411

340.000



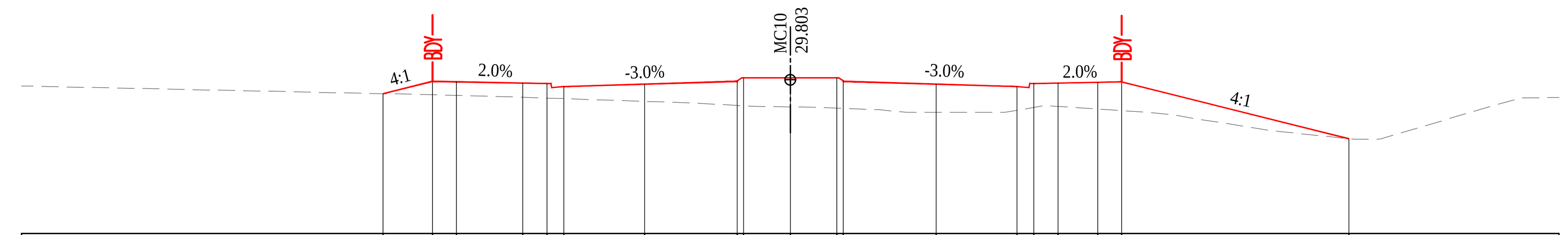
DESIGN LEVELS	27.646	30.047	30.029	29.979	29.960	29.850	29.942	30.047	30.177	30.107	30.177	30.047	29.942	29.850	29.960	29.979	30.009	30.027	27.548
EXISITNG LEVELS	27.646	26.357	26.221	25.881	25.758	25.703	25.397	25.267	25.253	25.157	25.072	25.061	24.944	25.100	25.132	25.179	25.349	25.483	27.548
DESIGN OFFSETS	-23.103	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.500	22.417

480.000



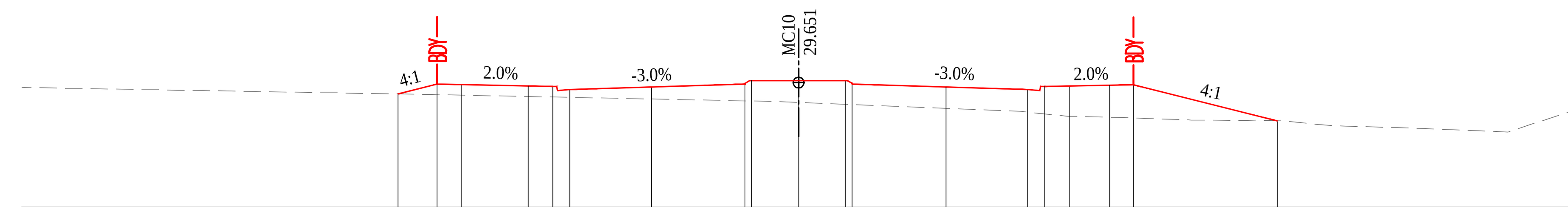
DESIGN LEVELS	29.740	29.895	29.877	29.827	29.808	29.698	29.790	29.895	30.025	29.955	30.025	29.895	29.790	29.698	29.808	29.827	29.857	29.875	27.829
EXISITNG LEVELS	29.740	29.827	29.968	30.342	30.313	30.301	30.257	30.209	30.206	30.017	29.799	29.775	29.238	28.247	28.136	28.048	28.111	28.127	27.829
DESIGN OFFSETS	-14.118	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.500	20.682

460.000



DESIGN LEVELS	29.277	29.743	29.725	29.675	29.656	29.546	29.638	29.743	29.873	29.803	29.873	29.743	29.638	29.546	29.656	29.675	29.705	29.723	27.581
EXISITNG LEVELS	29.277	29.236	29.212	29.144	29.108	29.092	28.990	28.833	28.820	28.779	28.738	28.728	28.572	28.655	28.759	28.800	28.699	28.639	27.581
DESIGN OFFSETS	-15.362	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.500	21.067

440.000



DESIGN LEVELS	29.225	29.591	29.573	29.523	29.504	29.394	29.486	29.591	29.721	29.651	29.721	29.591	29.486	29.394	29.504	29.523	29.553	29.571	28.228
EXISITNG LEVELS	29.225	29.200	29.182	29.132	29.111	29.102	29.041	28.972	28.967	28.912	28.840	28.831	28.693	28.553	28.486	28.390	28.360	28.337	28.228
DESIGN OFFSETS	-14.962	-13.500	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	-0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.500	17.870

420.000

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- BDY EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- BDY NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

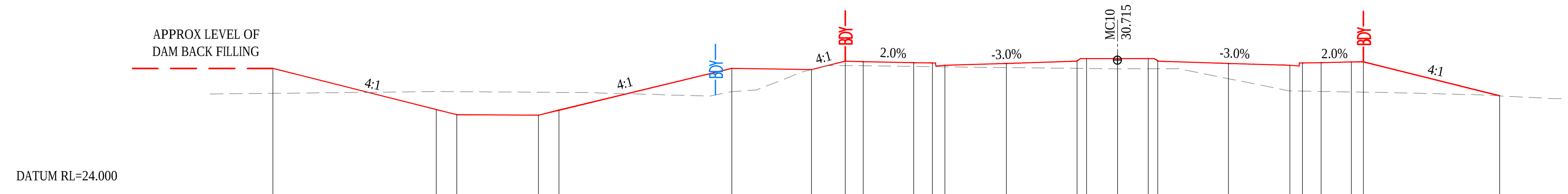
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GARFIELD RD WEST CH340 TO CH480

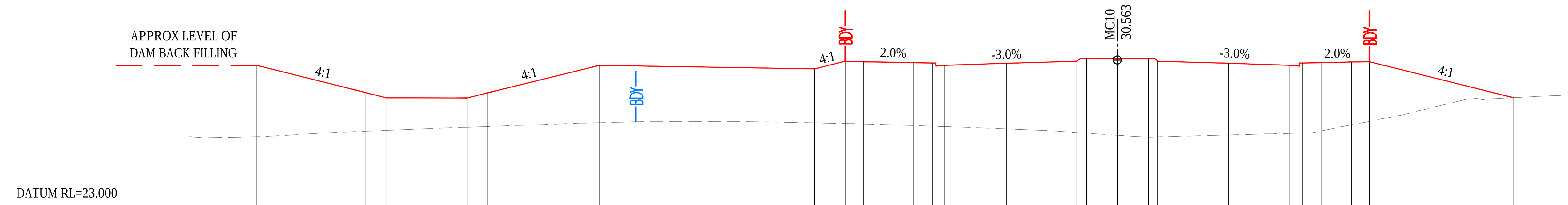
PLAN No: 110350-CC-802 H
FILE No: 110350-CC-802
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:05:24 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-802.dwg



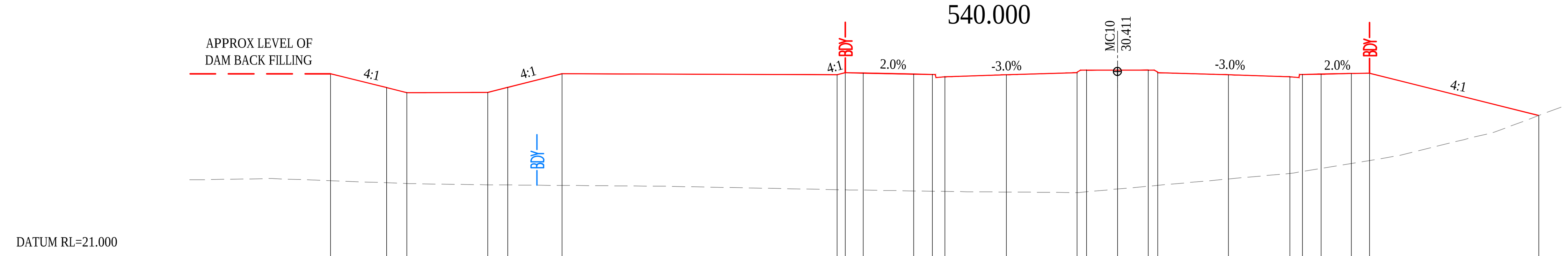
560.000

DESIGN OFFSETS	DESIGN LEVELS	EXISITNG LEVELS
-41.877	30.300	
-33.775	28.259	28.259
-32.761	28.004	
-28.707	27.983	
-27.694	28.228	28.228
-19.115	30.300	
-15.170	30.237	30.239
-13.500	30.655	30.435
-12.600	30.637	30.432
-10.100	30.587	30.399
-9.180	30.568	30.385
-8.550	30.458	30.379
-5.500	30.550	30.341
-2.000	30.655	30.302
-1.530	30.785	30.297
0.000	30.715	30.280
1.530	30.785	30.283
2.000	30.655	30.285
5.500	30.550	29.793
8.550	30.458	29.181
9.180	30.568	29.171
10.100	30.587	29.156
11.600	30.617	29.132
12.200	30.629	29.122
18.959	28.939	28.939



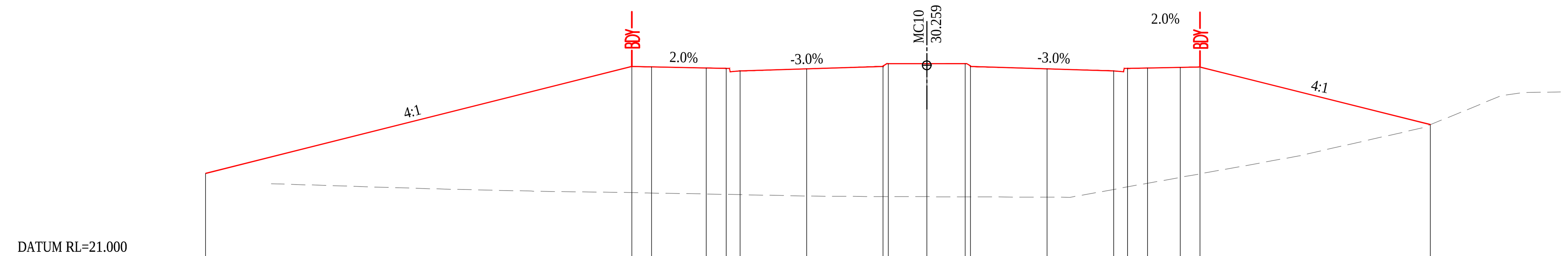
540.000

DESIGN OFFSETS	DESIGN LEVELS	EXISITNG LEVELS
-42.676	30.300	
-37.265	28.940	28.940
-36.263	28.688	
-32.253	28.679	
-31.250	28.926	28.926
-25.672	30.300	
-15.019	30.123	27.452
-13.500	30.503	27.422
-12.600	30.485	27.395
-10.100	30.435	27.317
-9.180	30.416	27.284
-8.550	30.306	27.269
-5.500	30.398	27.148
-2.000	30.503	26.971
-1.530	30.633	26.939
-0.000	30.563	26.833
1.530	30.633	26.740
2.000	30.503	26.753
5.500	30.398	26.849
8.550	30.306	26.931
9.180	30.416	26.947
10.100	30.435	27.049
11.600	30.465	27.350
12.500	30.483	27.531
19.662	28.692	28.692



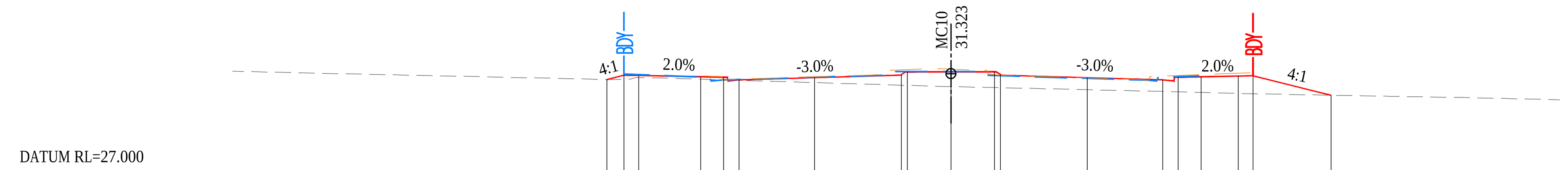
520.000

DESIGN OFFSETS	DESIGN LEVELS	EXISITNG LEVELS
-39.021	30.300	
-36.238	29.611	29.611
-35.236	29.363	
-31.228	29.371	
-30.226	29.623	29.623
-27.535	30.300	
-13.906	30.249	24.560
-13.500	30.351	24.552
-12.600	30.333	24.537
-10.100	30.283	24.499
-9.180	30.264	24.482
-8.550	30.154	24.475
-5.500	30.246	24.444
-2.000	30.351	24.417
-1.530	30.481	24.454
-0.000	30.411	24.593
1.530	30.481	24.731
2.000	30.351	24.773
5.500	30.246	25.090
8.550	30.154	25.366
9.180	30.264	25.458
10.100	30.283	25.609
11.600	30.313	25.856
12.500	30.331	26.005
20.893	28.232	28.232



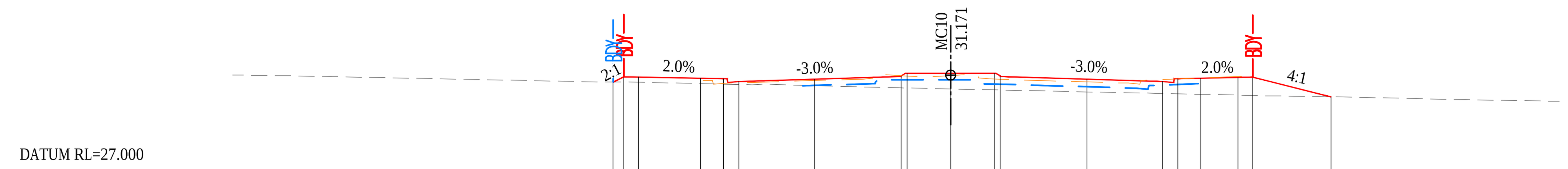
500.000

DESIGN OFFSETS	DESIGN LEVELS	EXISITNG LEVELS
-33.000	25.324	24.955
-13.500	30.199	24.445
-12.600	30.181	24.430
-10.100	30.131	24.382
-9.180	30.112	24.361
-8.550	30.002	24.352
-5.500	30.094	24.293
-2.000	30.199	24.269
-1.760	30.329	24.268
0.000	30.259	24.260
1.760	30.329	24.253
2.000	30.199	24.252
5.500	30.094	24.238
8.550	30.002	24.593
9.180	30.112	24.706
10.100	30.131	24.872
11.600	30.161	25.142
12.500	30.179	25.304
23.040	27.544	27.544



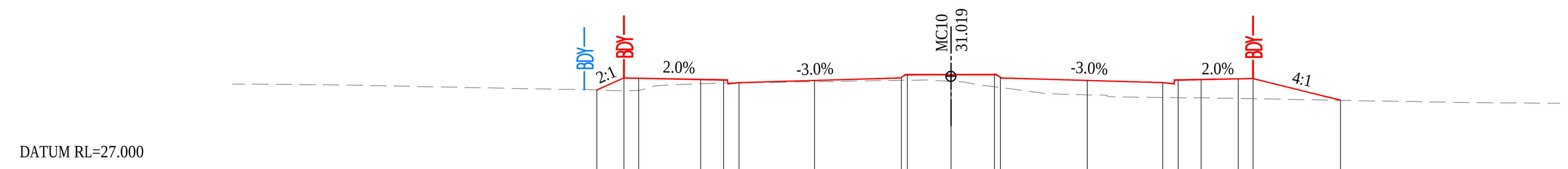
640.000

DESIGN OFFSETS	DESIGN LEVELS	EXISITNG LEVELS
-13.884	31.086	31.086
-12.600	31.245	31.158
-10.100	31.195	31.098
-9.180	31.176	31.066
-8.550	31.066	31.052
-5.500	31.158	30.959
-2.000	31.263	30.853
-1.760	31.393	30.846
0.000	31.323	30.798
1.760	31.393	30.759
2.000	31.263	30.753
5.500	31.158	30.675
8.550	31.066	30.600
9.180	31.176	30.584
10.100	31.195	30.561
11.600	31.225	30.524
12.200	31.237	30.510
15.345	30.450	30.450



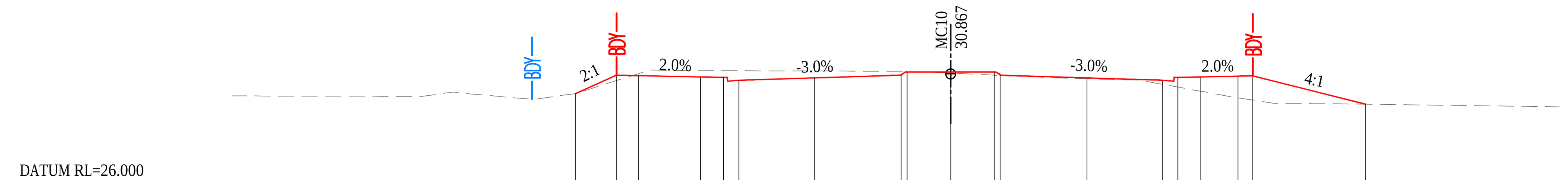
620.000

DESIGN OFFSETS	DESIGN LEVELS	EXISITNG LEVELS
-13.634	30.887	30.887
-13.200	31.105	30.892
-12.600	31.093	30.884
-10.100	31.043	30.827
-9.180	31.024	30.803
-8.550	30.914	30.792
-5.500	31.006	30.746
-2.000	31.111	30.658
-1.760	31.241	30.652
-0.000	31.171	30.613
1.760	31.241	30.575
2.000	31.111	30.569
5.500	31.006	30.494
8.550	30.914	30.428
9.180	31.024	30.415
10.100	31.043	30.395
11.600	31.073	30.362
12.200	31.085	30.350
15.361	30.295	30.295



600.000

DESIGN OFFSETS	DESIGN LEVELS	EXISITNG LEVELS
-14.288	30.466	30.466
-13.200	30.953	30.442
-12.600	30.941	30.452
-10.100	30.891	30.716
-9.180	30.872	30.747
-8.550	30.762	30.756
-5.500	30.854	30.804
-2.000	30.959	30.858
-1.760	31.089	30.861
0.000	31.019	30.817
1.760	31.089	30.597
2.000	30.959	30.565
5.500	30.854	30.268
8.550	30.762	30.167
9.180	30.872	30.159
10.100	30.891	30.147
11.600	30.921	30.128
12.200	30.933	30.120
15.733	30.049	30.049



580.000

DESIGN OFFSETS	DESIGN LEVELS	EXISITNG LEVELS
-15.140	30.074	30.074
-13.500	30.807	30.565
-12.600	30.789	30.867
-10.100	30.739	30.997
-9.180	30.720	30.993
-8.550	30.610	30.991
-5.500	30.702	30.981
-2.000	30.807	30.970
-1.760	30.937	30.968
-0.000	30.867	30.891
1.760	30.937	30.813
2.000	30.807	30.803
5.500	30.702	30.668
8.550	30.610	30.446
9.180	30.720	30.332
10.100	30.739	30.165
11.600	30.769	29.895
12.200	30.781	29.805
16.751	29.643	29.643

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
J	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
I	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J			5/02/19
F	ISSUED FOR INFORMATION	M.J.P	J.A	D.G	P.M	05/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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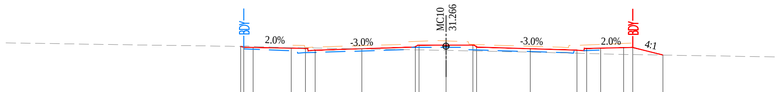
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GARFIELD RD WEST CH500 TO CH640

PLAN No: 110350-CC-803 | J
FILE No: 110350-CC-803
SHEET SIZE: A1 ORIGINAL

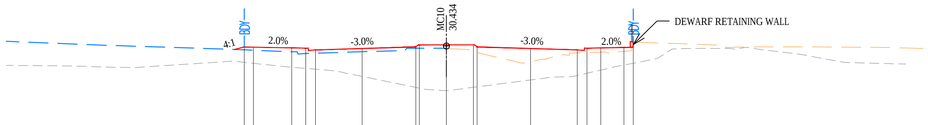
Plotted: 15 February , 2019 10:05:31 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-803.dwg



DATUM RL=27.000

DESIGN LEVELS	31.253	31.188	31.138	31.120	31.010	31.101	31.206	31.336	31.266	31.334	31.204	31.099	31.008	31.118	31.136	31.166	31.178	30.687
EXISITNG LEVELS	31.253	31.253	31.172	31.153	31.144	31.090	31.029	31.025	30.995	30.957	30.952	30.875	30.807	30.792	30.767	30.730	30.720	30.687
DESIGN OFFSETS	-13.412	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.200	14.163

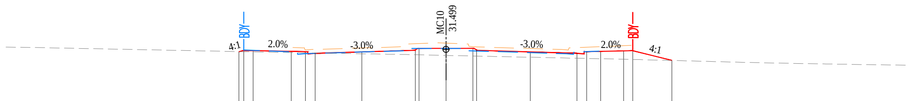
720.000



DATUM RL=24.000

DESIGN LEVELS	30.368	30.356	30.306	30.287	30.177	30.269	30.374	30.504	30.434	30.504	30.374	30.269	30.177	30.287	30.306	30.336	30.348
EXISITNG LEVELS	29.366	29.303	29.044	28.955	28.916	28.441	27.734	27.685	27.514	27.736	27.767	28.215	28.506	28.652	28.866	29.193	29.299
DESIGN OFFSETS	-13.200	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200

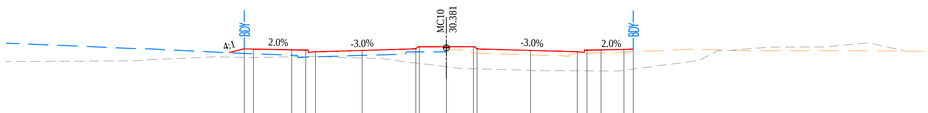
800.000



DATUM RL=27.000

DESIGN LEVELS	31.353	31.421	31.371	31.352	31.242	31.334	31.439	31.569	31.499	31.569	31.439	31.334	31.242	31.352	31.371	31.401	31.413	30.776
EXISITNG LEVELS	31.353	31.334	31.292	31.274	31.266	31.215	31.147	31.142	31.104	31.067	31.061	30.986	30.921	30.907	30.888	30.854	30.840	30.776
DESIGN OFFSETS	-13.518	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.200	14.748

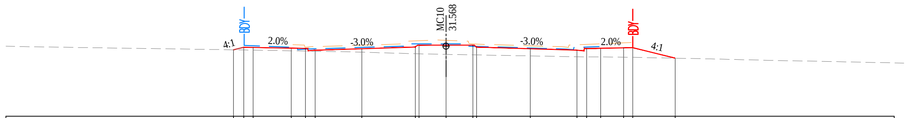
700.000



DATUM RL=25.000

DESIGN LEVELS	30.315	30.303	30.253	30.234	30.124	30.216	30.321	30.451	30.381	30.451	30.321	30.216	30.124	30.234	30.253	30.283	30.295
EXISITNG LEVELS	29.762	29.759	29.797	29.813	29.817	29.718	29.391	29.362	29.150	29.020	29.014	28.906	28.883	28.882	28.879	28.916	28.996
DESIGN OFFSETS	-13.200	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.200

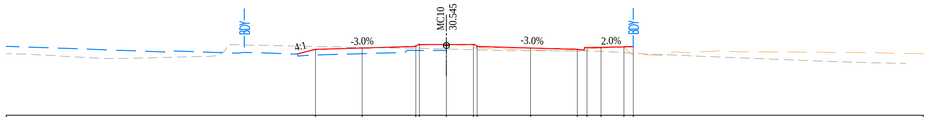
780.000



DATUM RL=27.000

DESIGN LEVELS	31.331	31.490	31.440	31.421	31.311	31.403	31.508	31.638	31.568	31.633	31.503	31.397	31.304	31.414	31.432	31.462	31.474	30.785
EXISITNG LEVELS	31.331	31.310	31.264	31.245	31.236	31.173	31.076	31.070	31.034	31.002	30.997	30.933	30.878	30.872	30.863	30.850	30.840	30.785
DESIGN OFFSETS	-13.883	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.200	14.958

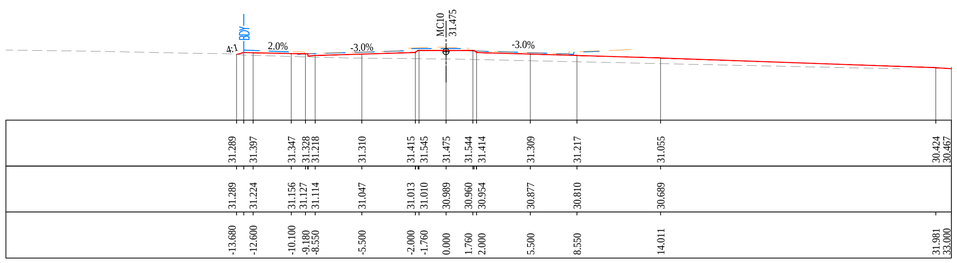
680.000



DATUM RL=26.000

DESIGN LEVELS	30.290	30.381	30.486	30.616	30.545	30.616	30.486	30.384	30.296	30.406	30.424	30.454	30.466
EXISITNG LEVELS	30.483	30.417	30.365	30.361	30.321	30.274	30.268	30.206	30.200	30.187	30.158	30.086	30.050
DESIGN OFFSETS	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.200

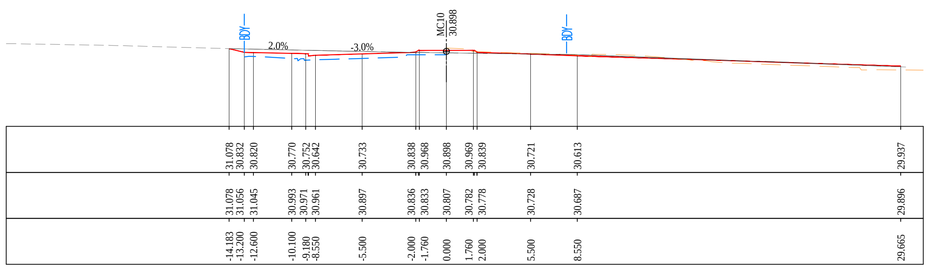
760.000



DATUM RL=27.000

DESIGN LEVELS	31.289	31.397	31.347	31.328	31.218	31.310	31.415	31.545	31.475	31.544	31.414	31.309	31.217	31.055	30.424	30.467
EXISITNG LEVELS	31.289	31.224	31.156	31.127	31.114	31.047	31.013	31.010	30.989	30.960	30.954	30.877	30.810	30.689	31.981	33.000
DESIGN OFFSETS	-13.680	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	14.011		

660.000



DATUM RL=26.000

DESIGN LEVELS	31.078	30.832	30.820	30.770	30.752	30.642	30.733	30.838	30.968	30.898	30.969	30.839	30.721	30.613	29.937
EXISITNG LEVELS	31.078	31.056	31.045	30.993	30.971	30.961	30.897	30.836	30.833	30.807	30.782	30.778	30.728	30.687	29.896
DESIGN OFFSETS	-14.183	-13.200	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	29.665

740.000

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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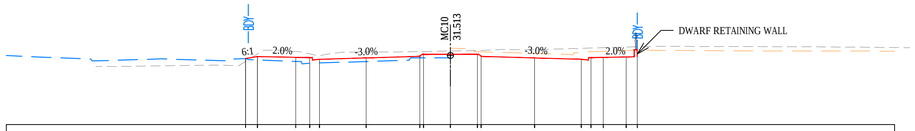
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GARFIELD RD WEST CH660 TO CH800

PLAN No: 110350-CC-804 H
FILE No: 110350-CC-804
SHEET SIZE: A1 ORIGINAL

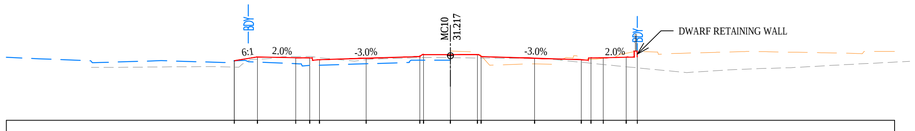
Plotted: 15 February , 2019 10:05:39 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-804.dwg



DATUM RL=27.000

DESIGN LEVELS	31.305	31.435	31.385	31.366	31.256	31.348	31.453	31.583	31.513	31.583	31.453	31.348	31.256	31.566	31.385	31.415	31.427
EXISITNG LEVELS	31.122	31.602	31.763	31.574	31.486	31.741	31.764	31.768	31.798	31.834	31.843	31.894	31.976	31.993	32.018	32.059	32.075
DESIGN OFFSETS	-13.376	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200

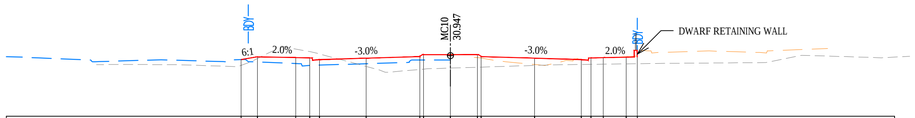
880.000



DATUM RL=27.000

DESIGN LEVELS	30.888	31.139	31.089	31.071	30.961	31.052	31.157	31.287	31.217	31.287	31.157	31.052	30.961	31.071	31.089	31.119	31.131
EXISITNG LEVELS	30.474	30.984	31.157	31.160	31.088	30.960	31.084	31.091	31.088	31.068	31.065	31.041	30.788	30.725	30.632	30.484	30.427
DESIGN OFFSETS	-14.107	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200

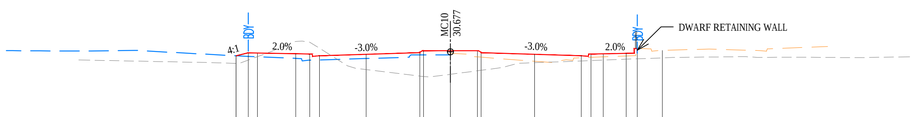
860.000



DATUM RL=27.000

DESIGN LEVELS	30.692	30.869	30.819	30.801	30.691	30.782	30.887	31.017	30.947	31.017	30.887	30.782	30.691	30.801	30.819	30.849	30.861
EXISITNG LEVELS	30.322	30.763	31.382	31.189	31.061	30.247	30.047	30.067	30.138	30.192	30.200	30.310	30.375	30.384	30.397	30.418	30.426
DESIGN OFFSETS	-13.661	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200

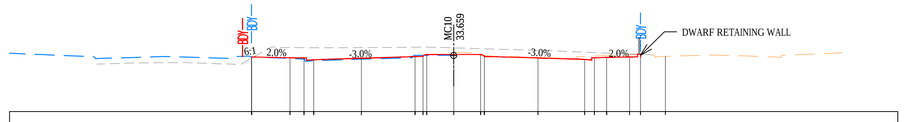
840.000



DATUM RL=26.000

DESIGN LEVELS	30.413	30.611	30.599	30.549	30.531	30.421	30.512	30.617	30.747	30.677	30.747	30.617	30.512	30.421	30.531	30.549	30.579	30.591	30.764
EXISITNG LEVELS	29.911	30.136	30.361	31.355	31.210	30.910	29.512	29.090	29.068	29.210	29.437	29.468	29.966	30.080	30.104	30.138	30.195	30.218	
DESIGN OFFSETS	-13.992	-13.200	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200	13.841

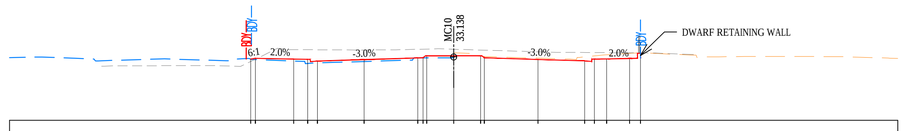
820.000



DATUM RL=30.000

DESIGN LEVELS	33.565	33.564	33.514	33.485	33.385	33.479	33.584	33.729	33.659	33.729	33.599	33.494	33.403	33.513	33.531	33.561	33.573
EXISITNG LEVELS	33.465	33.485	34.173	34.169	34.067	34.172	34.200	34.205	34.206	34.158	34.104	34.097	33.990	33.881	33.855	33.818	33.756	33.732	33.579	33.632
DESIGN OFFSETS	-13.199	-13.100	-10.691	-9.771	-9.141	-6.025	-2.535	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200	13.818

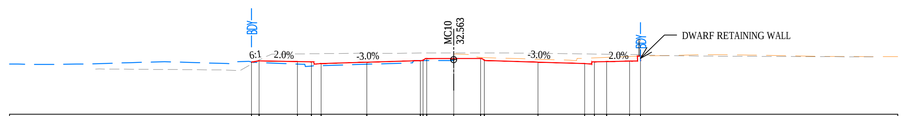
960.000



DATUM RL=29.000

DESIGN LEVELS	32.998	33.050	33.000	32.981	32.871	32.963	33.068	33.208	33.138	33.208	33.078	32.973	32.882	33.022	33.010	33.040	33.052
EXISITNG LEVELS	32.834	32.994	33.612	33.607	33.604	33.590	33.635	33.650	33.638	33.586	33.579	33.475	33.425	33.421	33.415	33.404	33.400
DESIGN OFFSETS	-13.360	-12.595	-10.450	-9.530	-8.900	-5.850	-2.350	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200

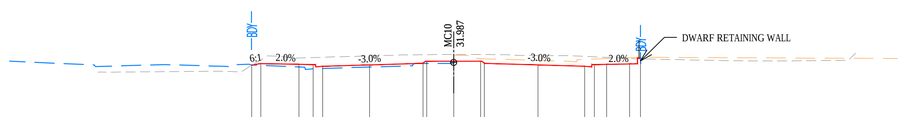
940.000



DATUM RL=29.000

DESIGN LEVELS	32.399	32.481	32.431	32.413	32.303	32.292	32.497	32.633	32.563	32.633	32.503	32.398	32.306	32.416	32.435	32.465	32.477
EXISITNG LEVELS	32.260	32.534	32.932	32.944	32.949	32.976	32.993	32.994	32.997	33.000	33.000	32.968	32.931	32.924	32.913	32.895	32.877
DESIGN OFFSETS	-13.207	-12.709	-10.209	-9.289	-8.659	-5.675	-2.175	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200

920.000



DATUM RL=28.000

DESIGN LEVELS	31.810	31.909	31.859	31.840	31.790	31.822	31.927	32.057	31.987	32.057	31.927	31.822	31.730	31.840	31.859	31.889	31.901
EXISITNG LEVELS	31.801	32.150	32.274	32.306	32.320	32.407	32.488	32.491	32.499	32.495	32.495	32.435	32.379	32.300	32.308	32.239	32.212
DESIGN OFFSETS	-13.192	-12.600	-10.100	-9.180	-8.550	-5.500	-2.000	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200

900.000

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

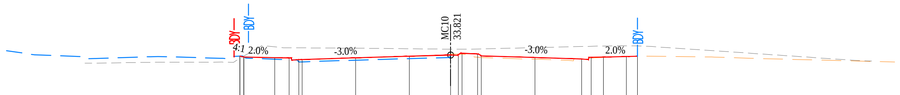
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GARFIELD RD WEST CH820 TO CH960

PLAN No: 110350-CC-805 H
FILE No: 110350-CC-805
SHEET SIZE: A1 ORIGINAL

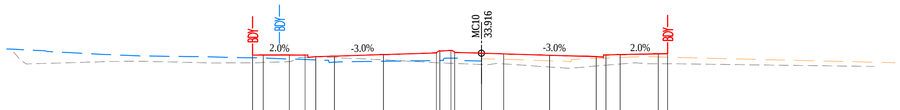
Plotted: 15 February , 2019 10:05:46 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-805.dwg



DATUM RL=30.000

DESIGN LEVELS	33.746	33.684	33.639	33.631	33.528	33.633	33.735	33.821	33.936	33.891	33.761	33.658	33.564	33.674	33.693	33.723	33.735
EXISITNG LEVELS	33.746	33.750	34.353	34.293	34.288	34.264	34.230	34.201	34.198	34.198	34.218	34.302	34.374	34.389	34.408	34.424	34.418
DESIGN OFFSETS	-13.759	-13.506	-11.485	-10.552	-9.700	-6.200	-2.700	0.000	0.740	1.760	2.000	5.500	8.550	9.180	10.100	11.600	12.200

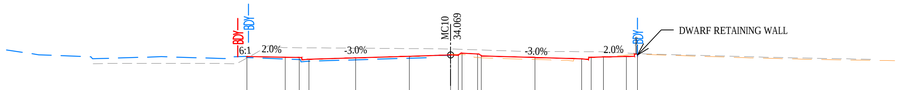
1040.000



DATUM RL=29.000

DESIGN LEVELS	33.798	33.799	33.798	33.795	33.865	33.734	33.830	33.933	34.099	33.969	33.916	33.873	33.783	33.698	33.808	33.826	33.876	33.868
EXISITNG LEVELS	33.294	33.308	33.371	33.650	33.673	33.636	33.488	33.297	33.254	33.245	33.179	33.176	33.236	33.015	33.082	33.135	33.211	33.230	33.230
DESIGN OFFSETS	-14.949	-14.253	-12.550	-11.519	-10.823	-9.603	-6.402	-2.950	-1.990	-1.750	0.000	1.450	4.450	7.500	8.130	9.050	11.550	12.150

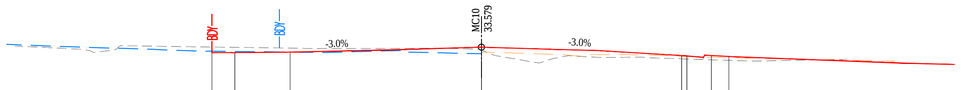
1120.000



DATUM RL=30.000

DESIGN LEVELS	34.023	33.973	33.955	33.845	33.936	34.041	34.122	34.237	34.192	34.062	33.957	33.866	33.976	33.994	34.024	34.036
EXISITNG LEVELS	33.866	34.547	34.539	34.536	34.513	34.488	34.456	34.438	34.436	34.395	34.302	34.285	34.282	34.262	34.188	34.161
DESIGN OFFSETS	-13.300	-10.800	-9.880	-9.250	-6.200	-2.700	0.000	0.740	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200

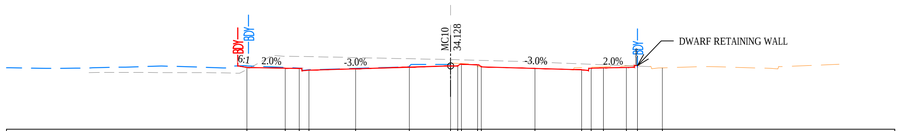
1020.000



DATUM RL=29.000

DESIGN LEVELS	33.222	33.224	33.254	33.579	33.010	33.034	32.975
EXISITNG LEVELS	33.588	33.566	33.515	33.382	33.409	33.387	33.443	33.346	32.814	32.801	32.768	32.752	32.717
DESIGN OFFSETS	-17.600	-16.100	-12.499	0.000	13.065	13.413	15.006	16.152

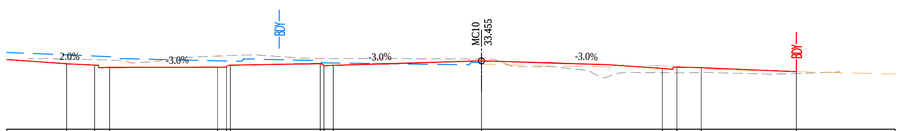
1100.000



DATUM RL=30.000

DESIGN LEVELS	34.195	34.145	34.126	34.016	34.109	34.215	34.297	34.412	34.366	34.236	34.131	34.040	34.150	34.168	34.198	34.210	33.998
EXISITNG LEVELS	33.905	34.756	34.742	34.732	34.670	34.599	34.545	34.529	34.527	34.495	34.381	34.258	34.232	34.195	34.135	34.111	33.967	34.009
DESIGN OFFSETS	-13.300	-10.800	-9.880	-9.250	-6.200	-2.700	0.000	0.707	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200	13.818

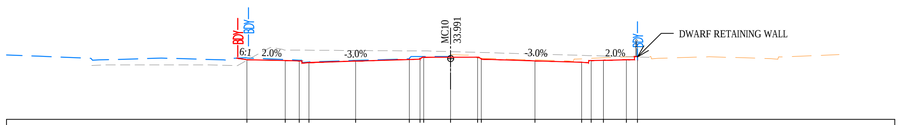
1000.000



DATUM RL=29.000

DESIGN LEVELS	33.273	33.174	33.033	33.041	33.181	33.275	33.164	33.455	32.968	33.048	33.009	32.745
EXISITNG LEVELS	33.574	33.533	33.511	33.774	33.807	33.809	33.606	33.603	33.262	33.573	33.312	33.205	32.685	32.680	32.695	32.633
DESIGN OFFSETS	-27.092	-25.255	-24.285	-17.235	-16.397	-10.530	-9.682	-0.000	11.813	12.768	14.349	20.557

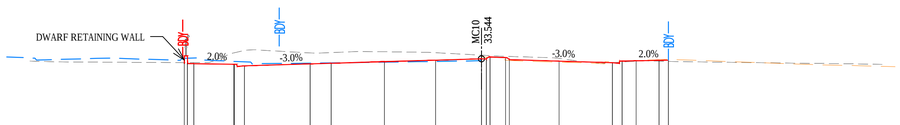
1080.000



DATUM RL=30.000

DESIGN LEVELS	34.163	34.113	34.095	33.985	34.076	34.181	34.332	34.265	34.335	34.205	34.100	34.008	34.118	34.137	34.167	34.179
EXISITNG LEVELS	33.862	34.531	34.523	34.520	34.499	34.477	34.471	34.427	34.377	34.370	34.270	34.182	34.164	34.137	34.094	34.076	33.969
DESIGN OFFSETS	-13.300	-10.800	-9.880	-9.250	-6.200	-2.700	-1.760	0.000	1.760	2.000	5.500	8.550	9.180	9.900	11.400	12.200

980.000



DATUM RL=29.000

DESIGN LEVELS	33.232	33.227	33.190	33.083	33.217	33.258	33.360	33.458	33.544	33.665	33.620	33.490	33.392	33.288	33.398	33.416	33.446	33.458
EXISITNG LEVELS	33.299	33.297	33.928	34.086	33.944	33.952	34.005	33.944	33.784	33.754	33.709	33.702	33.573	33.288	33.332	33.397	33.392	33.374
DESIGN OFFSETS	-19.403	-18.776	-16.166	-15.477	-11.186	-9.820	-6.339	-2.998	-0.000	0.557	1.577	1.817	5.065	8.550	9.180	10.100	11.600	12.200

1060.000

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

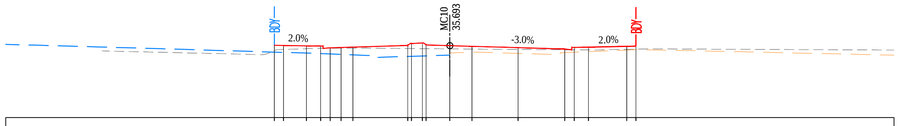
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GARFIELD RD WEST CH980 TO CH1120

PLAN No: 110350-CC-806 H
FILE No: 110350-CC-806
SHEET SIZE: A1 ORIGINAL

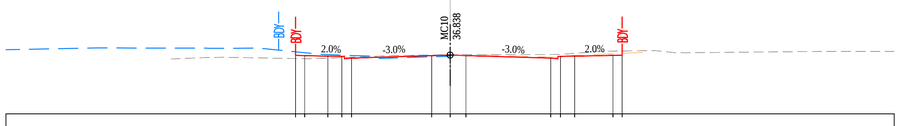
Plotted: 15 February, 2019 10:05:54 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-806.dwg



DATUM RL=31.000

DESIGN LEVELS	35.721	35.709	35.680	35.662	35.552	35.528	35.501	35.704	35.870	35.740	35.693	35.650	35.560	35.468	35.578	35.597	35.647	35.659
EXISITNG LEVELS	35.361	35.442	35.501	35.518	35.522	35.529	35.537	35.506	35.497	35.495	35.481	35.469	35.444	35.423	35.419	35.413	35.449	35.460
DESIGN OFFSETS	-11.462	-10.862	-9.362	-8.442	-7.811	-7.209	-6.331	-2.750	-1.790	-1.550	0.000	1.450	4.450	7.500	8.130	9.050	11.550	12.150

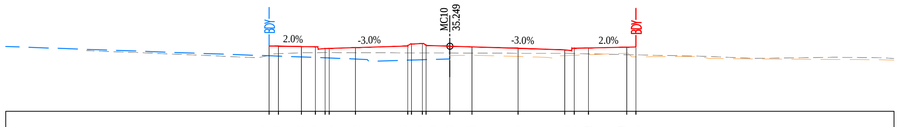
1200.000



DATUM RL=33.000

DESIGN LEVELS	36.815	36.803	36.773	36.754	36.644	36.801	36.828	36.807	36.641	36.751	36.770	36.820	36.832
EXISITNG LEVELS	36.613	36.602	36.643	36.683	36.701	36.842	36.860	36.862	36.882	36.884	36.954	37.099	37.107
DESIGN OFFSETS	-10.092	-9.492	-7.991	-7.070	-6.440	-1.203	0.000	1.034	6.574	7.252	8.127	10.631	11.232

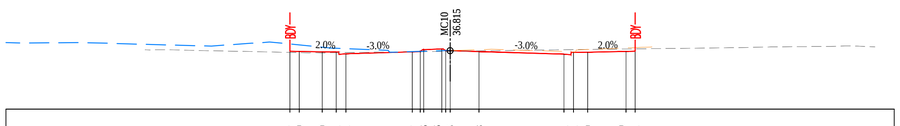
1280.000



DATUM RL=31.000

DESIGN LEVELS	35.267	35.255	35.225	35.207	35.108	35.159	35.260	35.426	35.296	35.249	35.208	35.116	35.006	35.116	35.134	35.184	35.196
EXISITNG LEVELS	34.659	34.757	34.820	34.829	34.831	34.825	34.814	34.811	34.810	34.805	34.803	34.801	34.791	34.782	34.769	34.750	34.699	34.686
DESIGN OFFSETS	-11.797	-11.197	-9.697	-8.777	-7.875	-6.161	-2.750	-1.790	-1.550	0.000	1.450	4.450	7.500	8.130	9.050	11.550	12.150

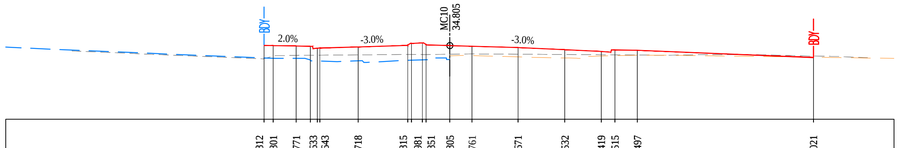
1180.000



DATUM RL=33.000

DESIGN LEVELS	36.781	36.769	36.739	36.721	36.611	36.741	36.886	36.936	36.815	36.758	36.591	36.701	36.719	36.769	36.781
EXISITNG LEVELS	36.703	36.690	36.674	36.687	36.694	36.748	36.757	36.758	36.776	36.780	36.803	36.876	36.884	36.895	36.925	36.933
DESIGN OFFSETS	-10.456	-9.856	-8.356	-7.436	-6.805	-2.469	-1.718	-0.546	-0.000	1.880	7.420	8.060	8.980	11.480	12.080

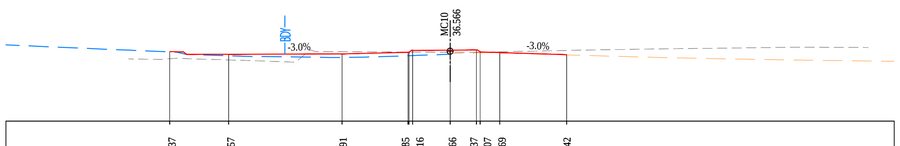
1260.000



DATUM RL=30.000

DESIGN LEVELS	34.812	34.801	34.771	34.633	34.643	34.718	34.815	34.981	34.851	34.805	34.761	34.671	34.532	34.419	34.515	34.497	34.021
EXISITNG LEVELS	33.947	34.120	34.164	34.174	34.177	34.196	34.224	34.221	34.223	34.239	34.244	34.255	34.240	34.221	34.204	34.197	34.187	34.123
DESIGN OFFSETS	-12.133	-11.533	-10.032	-8.650	-8.482	-5.991	-2.750	-1.790	-1.550	0.000	1.450	4.450	7.502	9.885	10.773	12.245	23.739

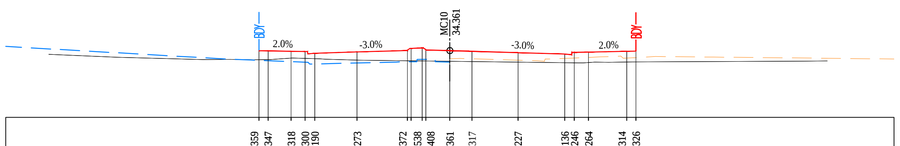
1160.000



DATUM RL=32.000

DESIGN LEVELS	36.537	36.357	36.391	36.485	36.616	36.566	36.637	36.507	36.469	36.342
EXISITNG LEVELS	36.061	36.076	35.991	36.526	36.509	36.507	36.495	36.491	36.496	36.522	36.612
DESIGN OFFSETS	-18.315	-14.468	-7.061	-2.750	-2.444	0.000	1.718	1.962	3.235	7.611

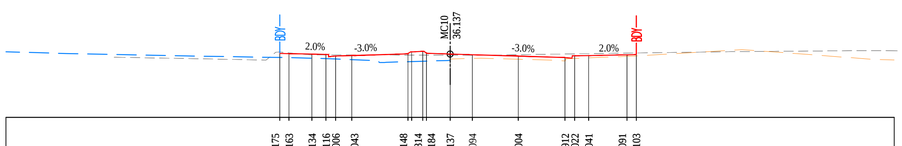
1240.000



DATUM RL=30.000

DESIGN LEVELS	34.359	34.347	34.318	34.300	34.190	34.273	34.372	34.538	34.408	34.361	34.317	34.227	34.136	34.246	34.264	34.314	34.326
EXISITNG LEVELS	33.763	33.770	33.871	33.851	33.838	33.746	33.701	33.688	33.685	33.664	33.661	33.648	33.606	33.566	33.558	33.587	33.615	33.622
DESIGN OFFSETS	-12.468	-11.868	-10.368	-9.447	-8.817	-6.067	-2.767	-1.807	-1.567	0.000	1.450	4.450	7.500	8.130	9.050	11.550	12.150

1140.000



DATUM RL=32.000

DESIGN LEVELS	36.175	36.163	36.134	36.116	36.086	36.043	36.148	36.314	36.184	36.137	36.094	36.004	35.812	35.922	36.041	36.091	36.103
EXISITNG LEVELS	36.265	36.214	36.079	36.077	36.077	36.076	36.074	36.073	36.073	36.070	36.061	36.092	36.140	36.149	36.162	36.197	36.206
DESIGN OFFSETS	-11.127	-10.527	-9.026	-8.106	-7.476	-6.426	-2.750	-1.790	-1.550	0.000	1.450	4.450	7.500	8.130	9.050	11.550	12.150

1220.000

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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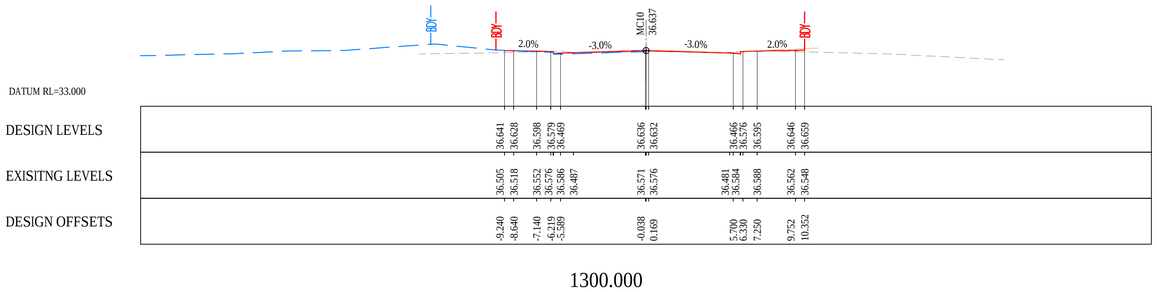
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GARFIELD RD WEST CH1140 TO CH1280

PLAN No: 110350-CC-807 H
FILE No: 110350-CC-807
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:06:02 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-807.dwg



LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- BDY EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- BDY NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
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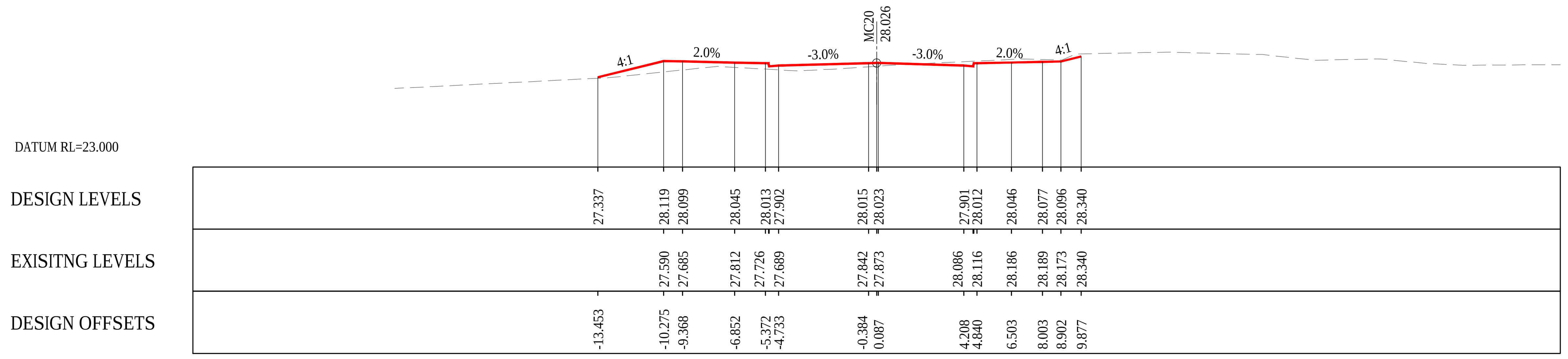
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GARFIELD RD WEST CH1300 TO CH1320

PLAN No: 110350-CC-808 H
FILE No: 110350-CC-808
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:06:09 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-808.dwg



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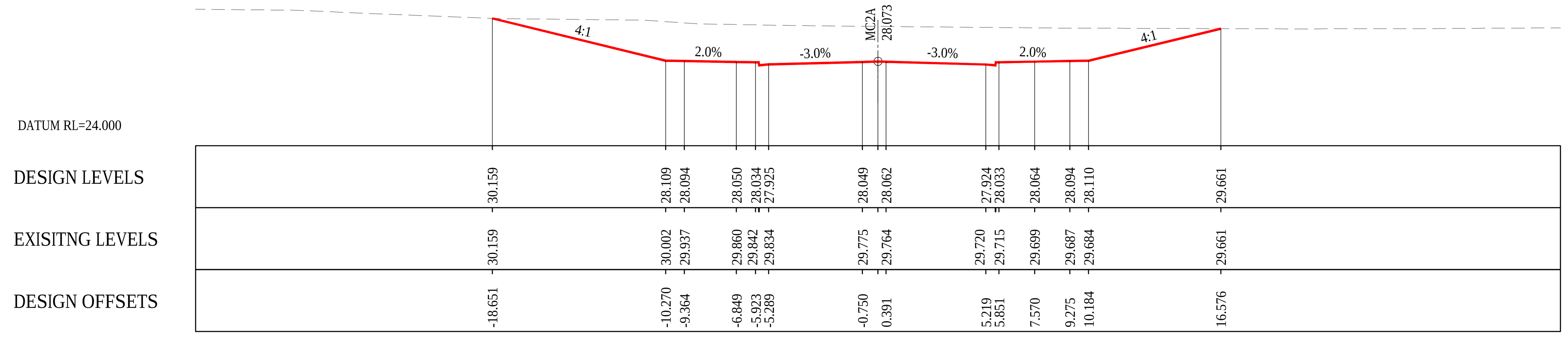
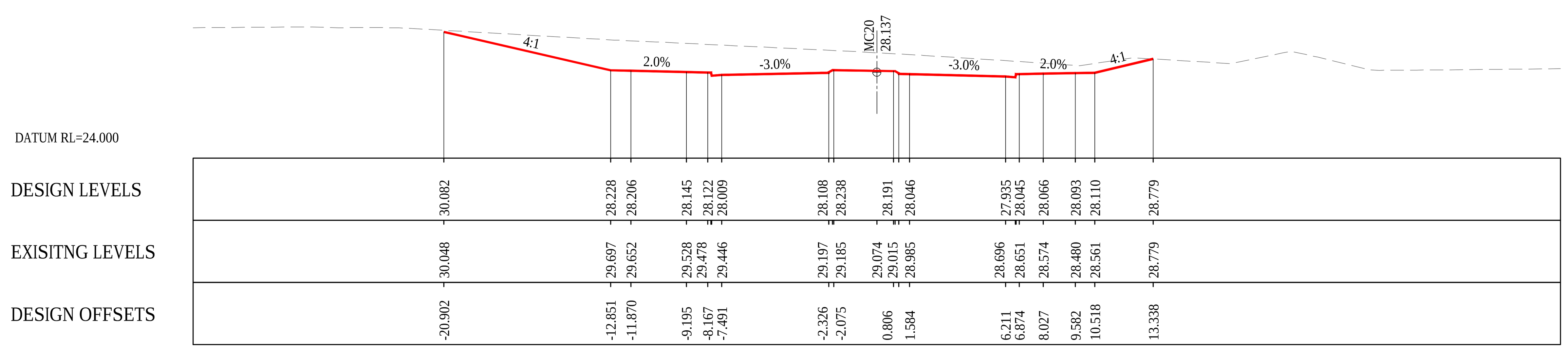
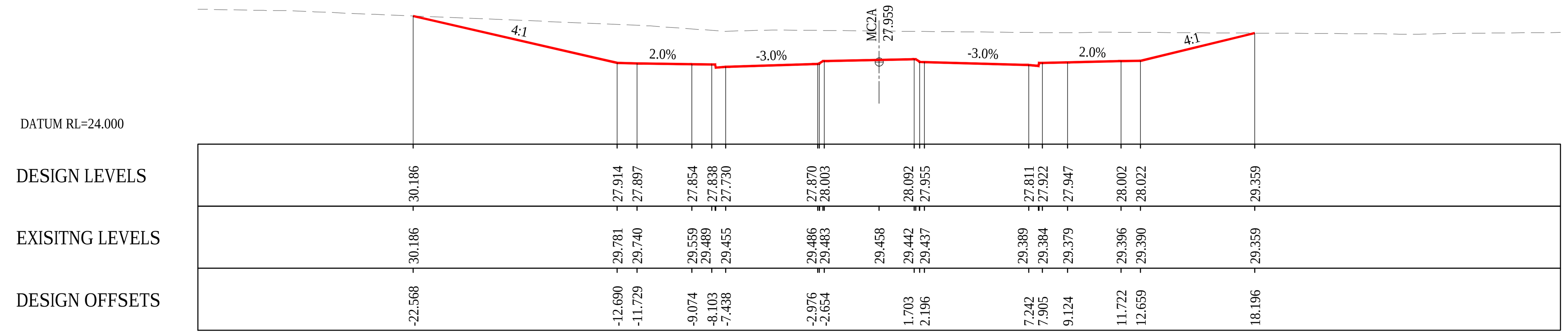


50.000



40.000



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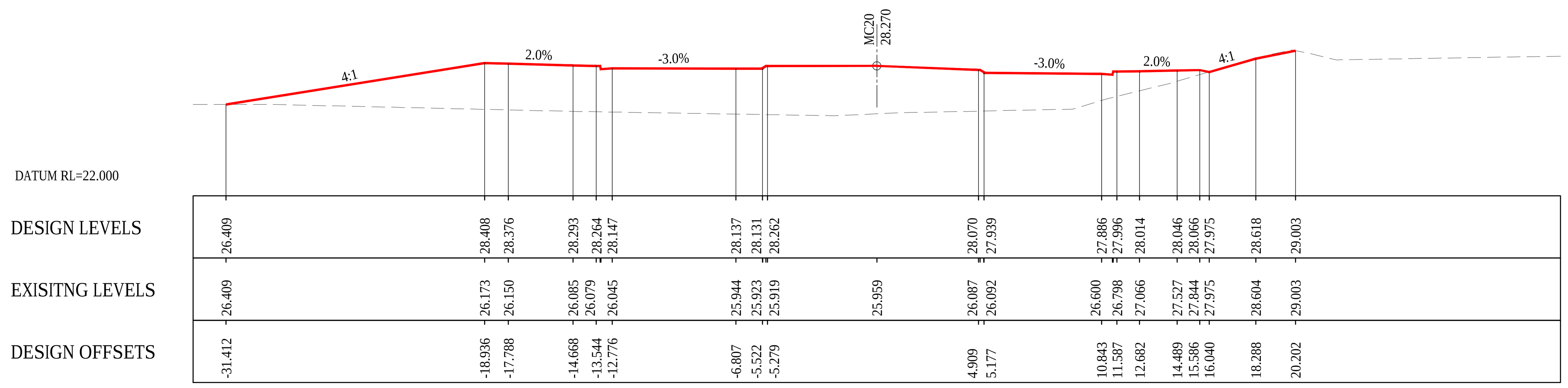
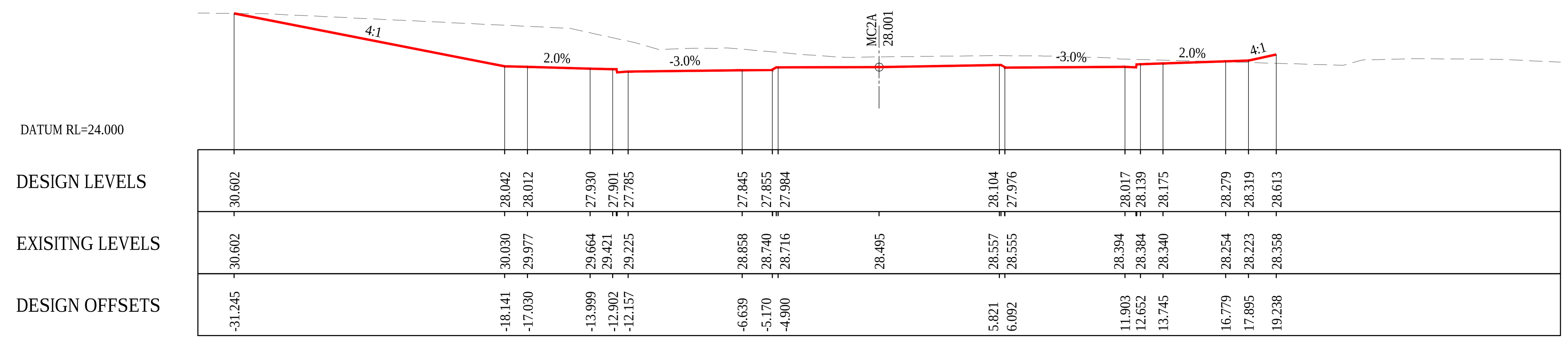


30.000

ROAD 2



30.000

ROAD 2A

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- BDY EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- BDY NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - ROAD 2 AND 2A

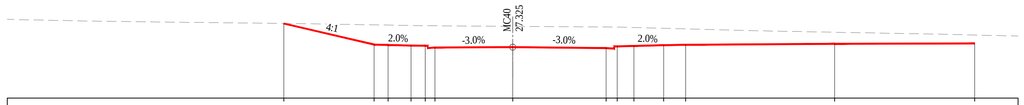
PLAN No: 110350-CC-809 H
FILE No: 110350-CC-809
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:06:16 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-809.dwg

DATUM RL=24.000

DESIGN LEVELS	28.782	27.349	27.331	27.301	27.283	27.173	27.264	27.163	27.273	27.291	27.321	27.340	28.432
EXISITNG LEVELS	28.782	28.699	28.684	28.669	28.661	28.638	28.622	28.587	28.582	28.576	28.565	28.546	28.432	28.076
DESIGN OFFSETS	-14.731	-9.000	-8.100	-6.600	-5.680	-5.050	-0.000	5.050	5.680	6.600	8.100	9.000	13.364

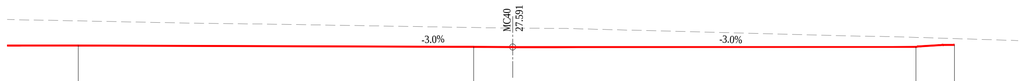
24.200



DATUM RL=24.000

DESIGN LEVELS	28.870	27.491	27.467	27.431	27.410	27.299	27.325	27.265	27.380	27.407	27.452	27.480	27.543	27.570
EXISITNG LEVELS	28.870	28.780	28.765	28.740	28.722	28.718	28.682	28.639	28.634	28.607	28.556	28.519	28.298	28.118	28.077
DESIGN OFFSETS	-14.947	-9.042	-8.135	-6.630	-5.707	-5.076	-0.000	6.100	6.823	7.912	9.864	11.297	21.019	30.169

20.000

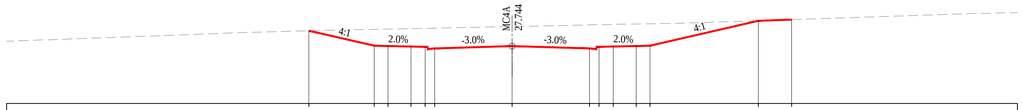


DATUM RL=24.000

DESIGN LEVELS	27.687	27.593	27.591	27.729
EXISITNG LEVELS	29.385	29.294	28.862	28.824	28.219	28.216	28.164	28.141	27.921
DESIGN OFFSETS	-28.370	-2.543	26.337	28.843

10.000

ROAD 4



DATUM RL=24.000

DESIGN LEVELS	28.748	27.768	27.750	27.720	27.702	27.592	27.744	27.592	27.702	27.720	27.750	27.768	29.404	29.476
EXISITNG LEVELS	28.748	28.838	28.857	28.888	28.910	28.920	29.024	29.129	29.142	29.161	29.189	29.205	29.404	29.476
DESIGN OFFSETS	-13.272	-9.000	-8.100	-6.600	-5.680	-5.050	0.000	5.050	5.680	6.600	8.100	9.000	16.082	18.245

20.000

DATUM RL=24.000

DESIGN LEVELS	27.784	27.737	27.620	27.645	27.629	27.751
EXISITNG LEVELS	28.641	28.762	28.772	28.794	28.982	29.154	29.171	29.177	29.621
DESIGN OFFSETS	-14.818	-10.212	-8.976	0.000	9.267	10.611

10.000

ROAD 4A

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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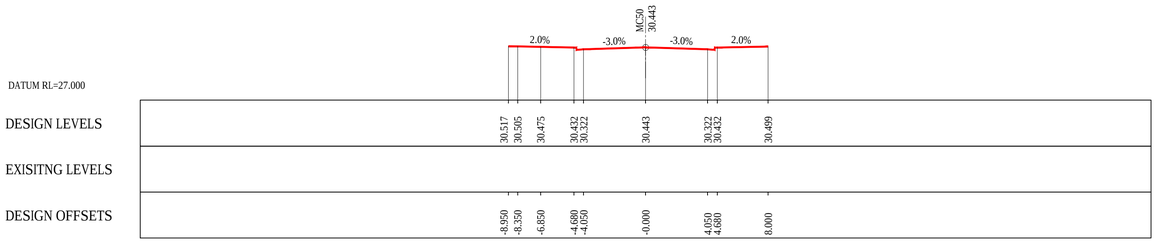
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

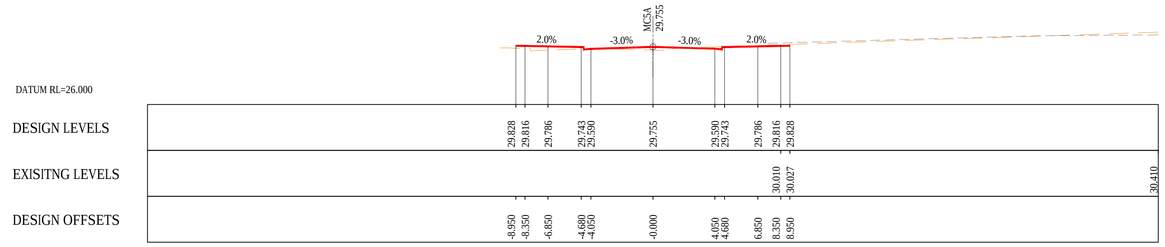
CROSS SECTIONS - ROAD 4 AND 4A

PLAN No: 110350-CC-810 H
FILE No: 110350-CC-810
SHEET SIZE: A1 ORIGINAL

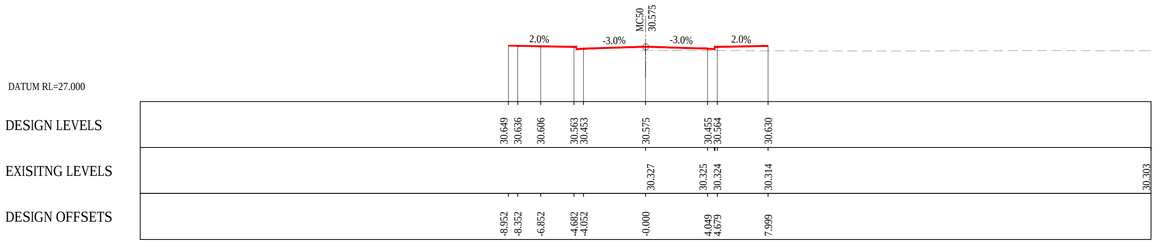
Plotted: 15 February 2019 10:06:23 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-810.dwg



34.500



38.360



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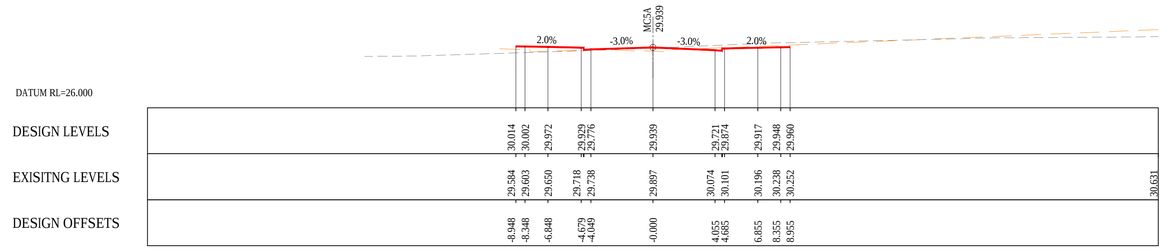

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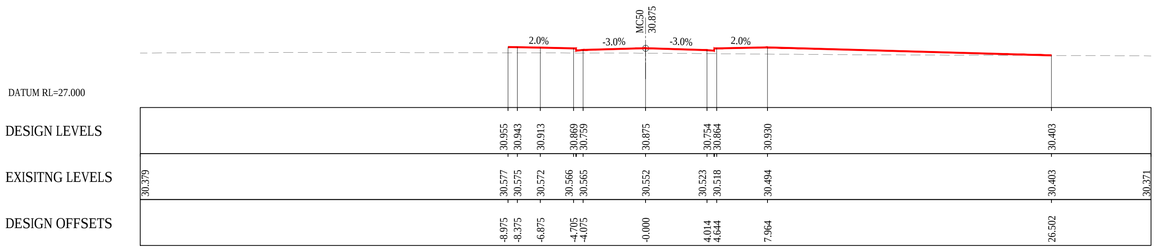

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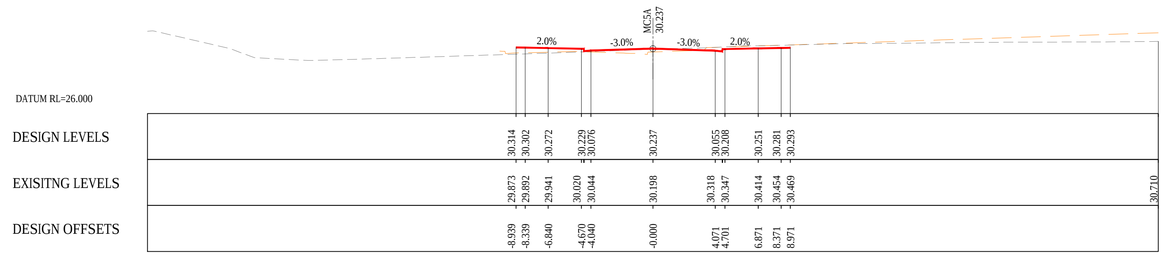

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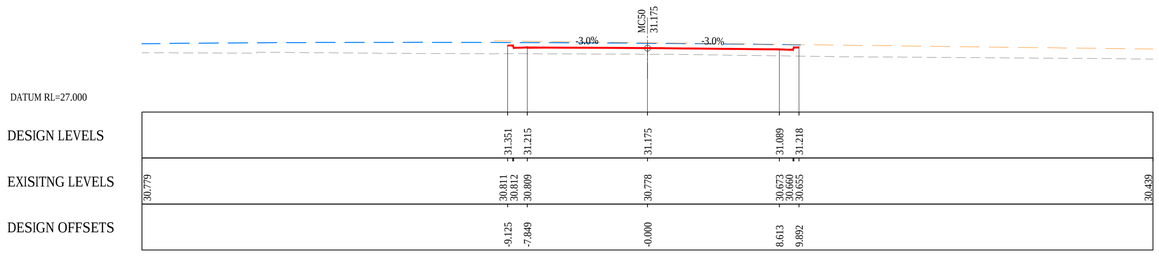
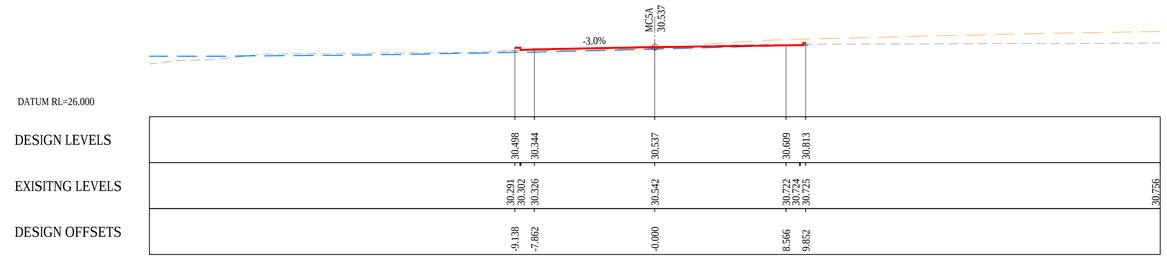


10.000

SALIX ROAD (1)



10.000

SALIX ROAD (2)

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

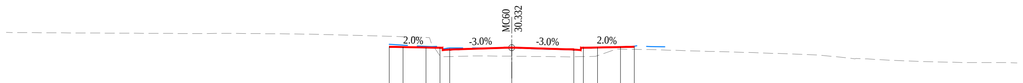
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - SALIX ROAD (1) AND SALIX ROAD (2)

PLAN No: 110350-CC-811 H
FILE No: 110350-CC-811
SHEET SIZE: A1 ORIGINAL

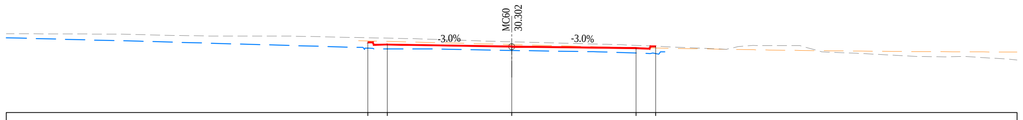
Plotted: 15 February, 2019 10:06:30 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-811.dwg



DATUM RL=26.000

DESIGN LEVELS	30.387	30.369	30.339	30.320	30.210	30.332	30.210	30.320	30.339	30.369	30.387
EXISITNG LEVELS	31.070	31.042	30.995	29.772	29.744	29.769	29.731	29.743	29.804	30.229	30.217
DESIGN OFFSETS	-8.000	-7.100	-5.600	-4.680	-4.050	0.000	4.050	4.680	5.600	7.100	8.000

20.000



DATUM RL=26.000

DESIGN LEVELS	30.389	30.441	30.302	30.206	30.317
EXISITNG LEVELS	30.885 30.876	30.858	30.616	30.206 30.344	30.329
DESIGN OFFSETS	-9.399	-8.122	0.000	8.120	9.401

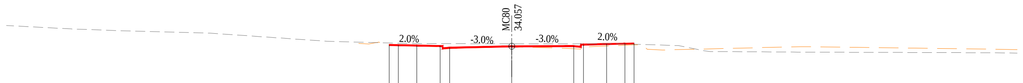
10.000

MEGARRY AVENUE

DATUM RL=30.000

DESIGN LEVELS	33.974	33.962	33.938	33.908	33.798	33.919	33.825	33.935	33.965	33.989	34.001
EXISITNG LEVELS											
DESIGN OFFSETS	-7.999	-7.399	-6.199	-4.679	-4.049	0.000	4.052	4.682	6.192	7.392	7.992

30.000



DATUM RL=30.000

DESIGN LEVELS	34.140	34.128	34.104	34.074	33.964	34.057	34.062	34.172	34.202	34.226	34.238
EXISITNG LEVELS	35.290	34.275	34.259	34.232	34.230	34.228	34.221	34.214	34.213	34.210	34.204	34.189	33.688
DESIGN OFFSETS	-8.000	-7.400	-6.200	-4.680	-4.050	0.000	4.050	4.680	6.190	7.390	7.990

20.000

DATUM RL=30.000

DESIGN LEVELS	34.598	34.526	34.393	34.293	34.246	34.349	34.343	34.028
EXISITNG LEVELS	35.477	34.588	34.527	34.508	34.398	34.200	34.160	34.086	33.597	33.545
DESIGN OFFSETS	-8.965	-7.251	-6.368	-0.000	7.368	8.408	10.357	30.612

10.000

SPRINGDALE ROAD

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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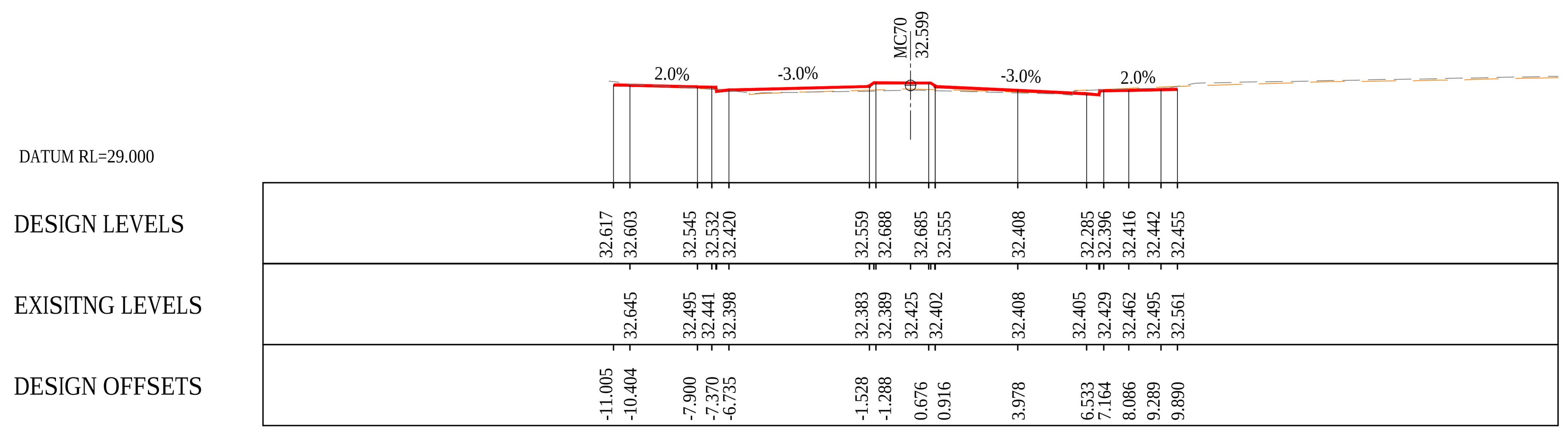
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - MEGARRY AVE AND SPRINGDALE ROAD

PLAN No: 110350-CC-812 H
FILE No: 110350-CC-812
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:06:37 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-812.dwg



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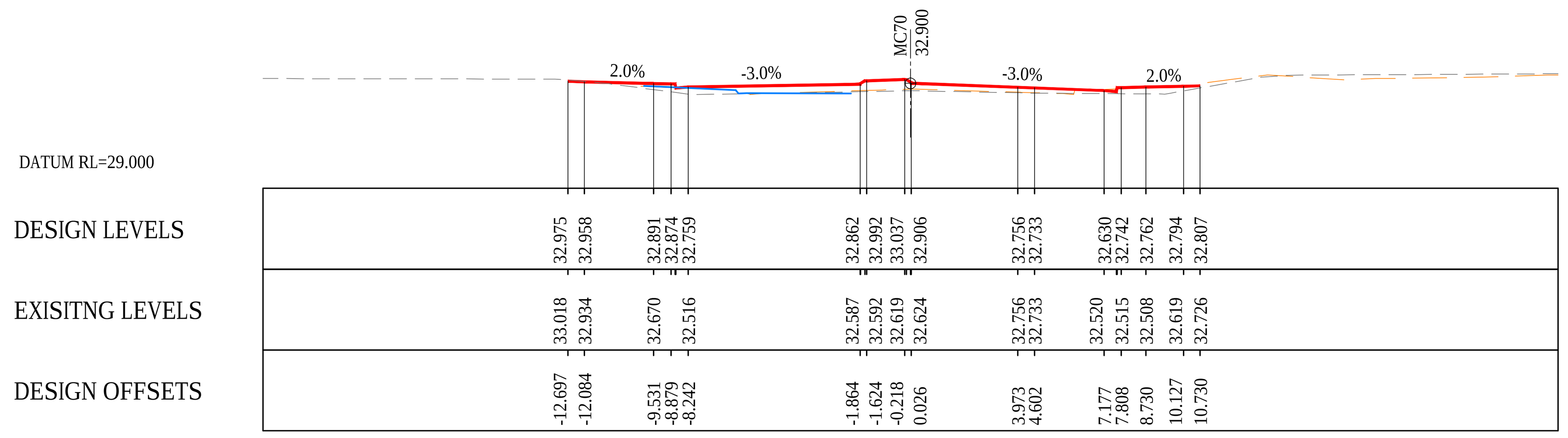

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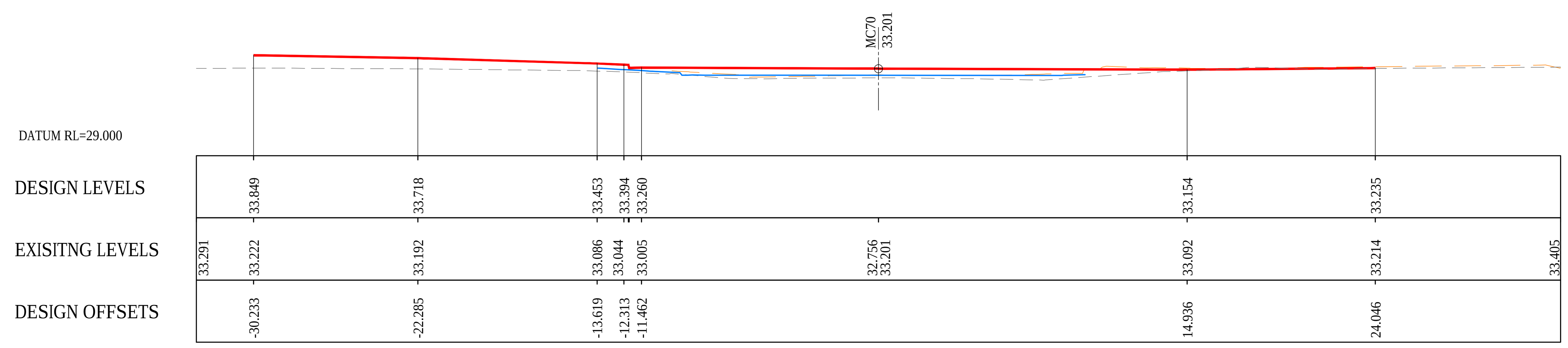

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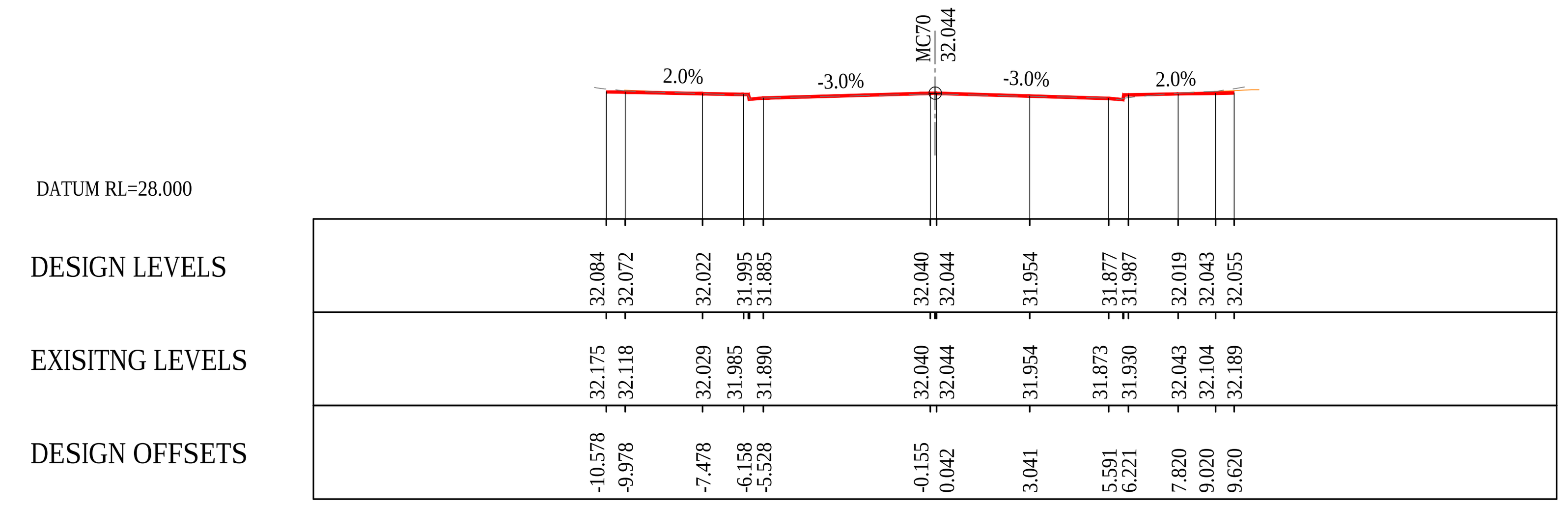

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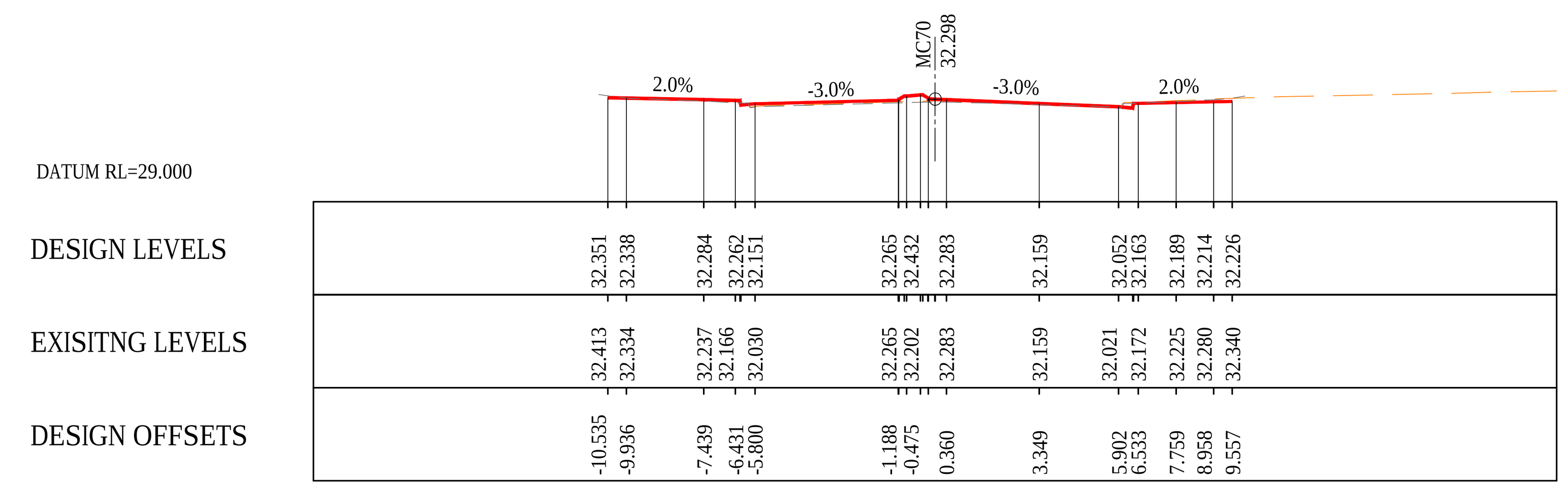

40.000

NORTHBOURNE DRIVE

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- BDY EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- BDY NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

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PO Box 4366 PENRITH WESTFIELD NSW 2750
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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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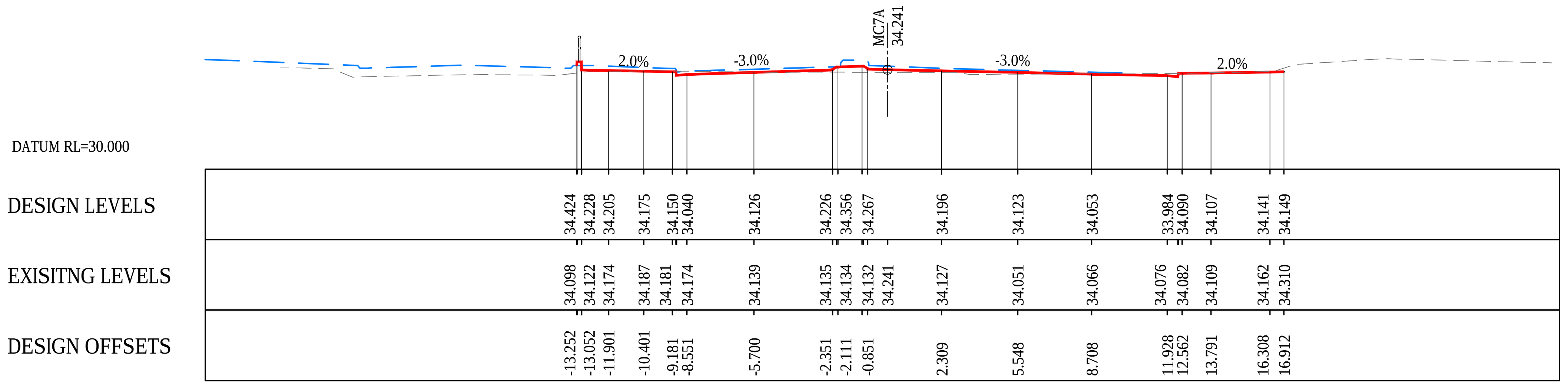
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - NORTHBOURNE DRIVE

PLAN No: 110350-CC-813 H
FILE No: 110350-CC-813
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:06:44 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-813.dwg



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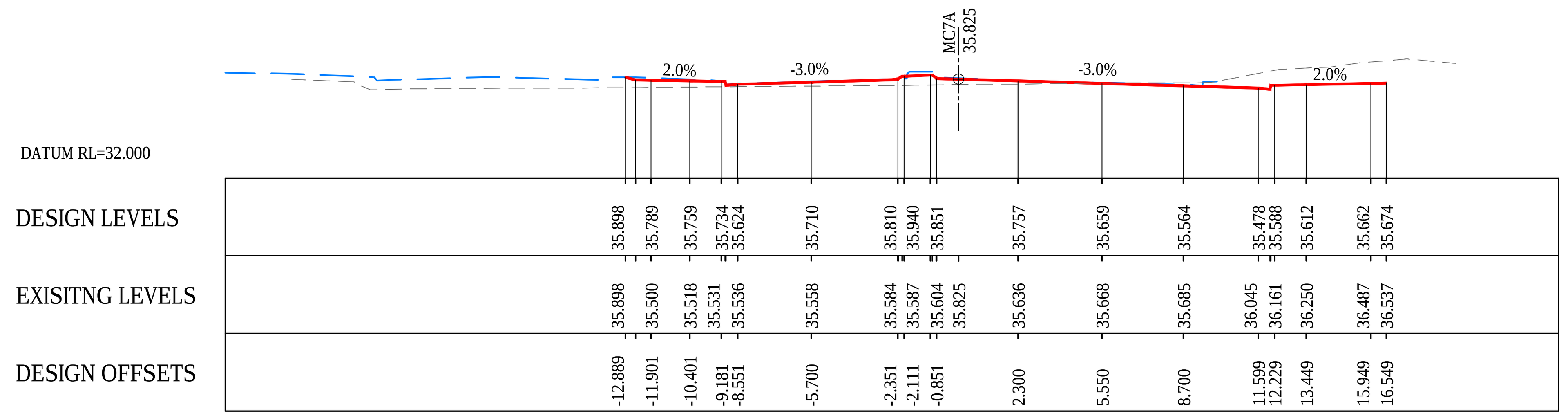
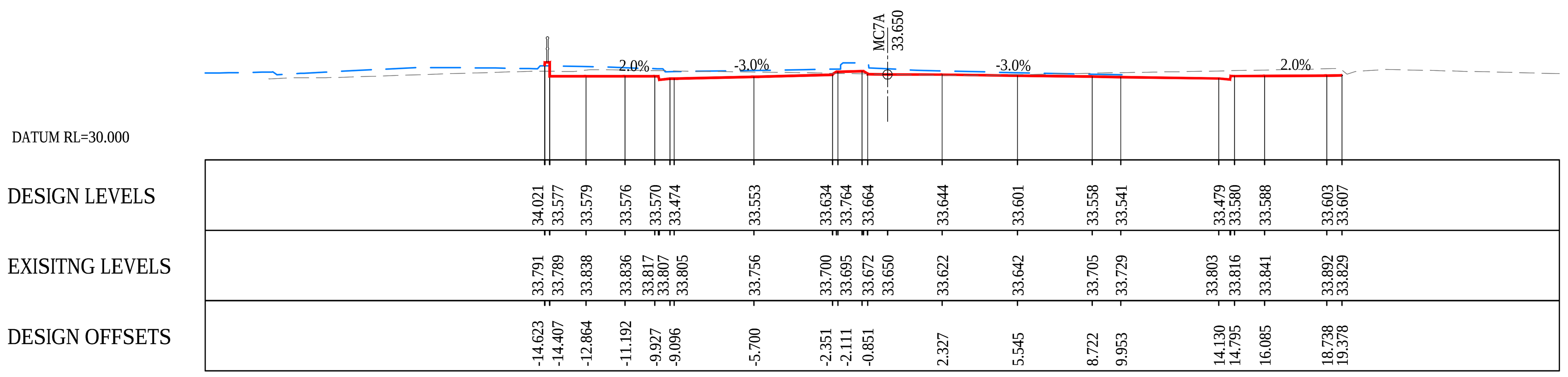


70.000



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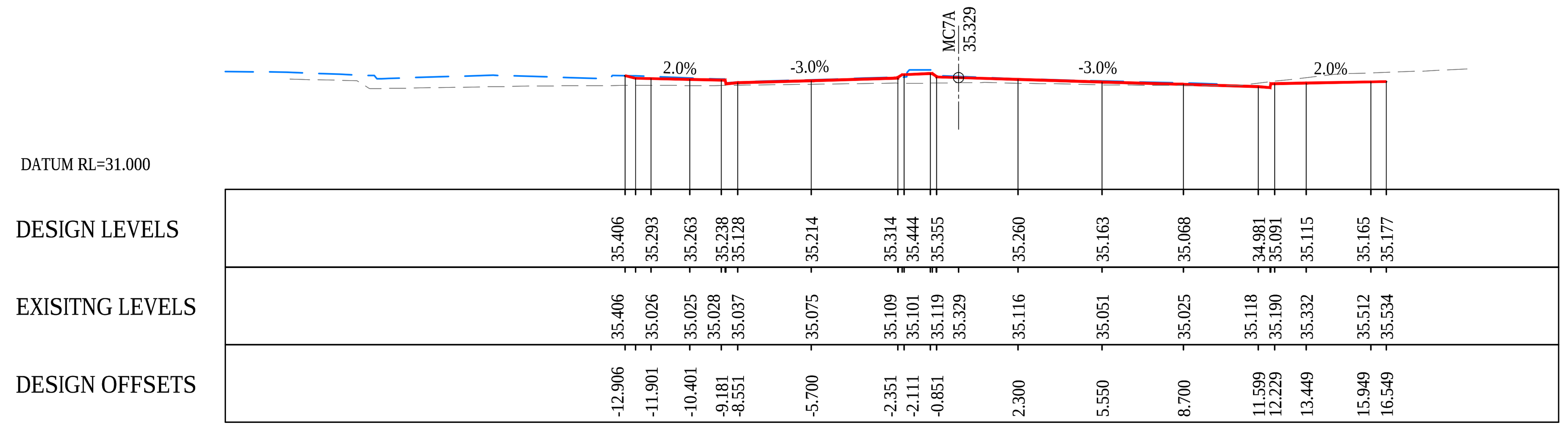

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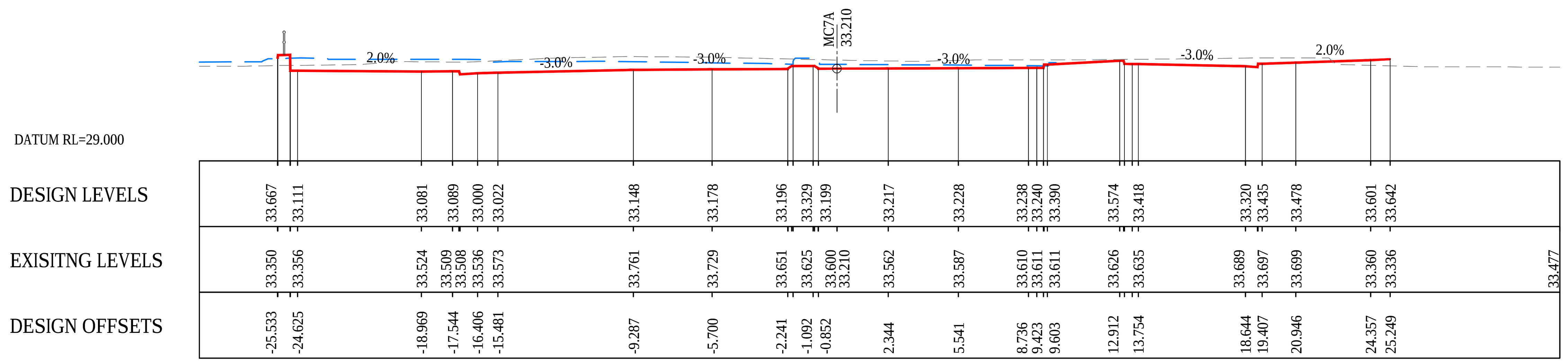

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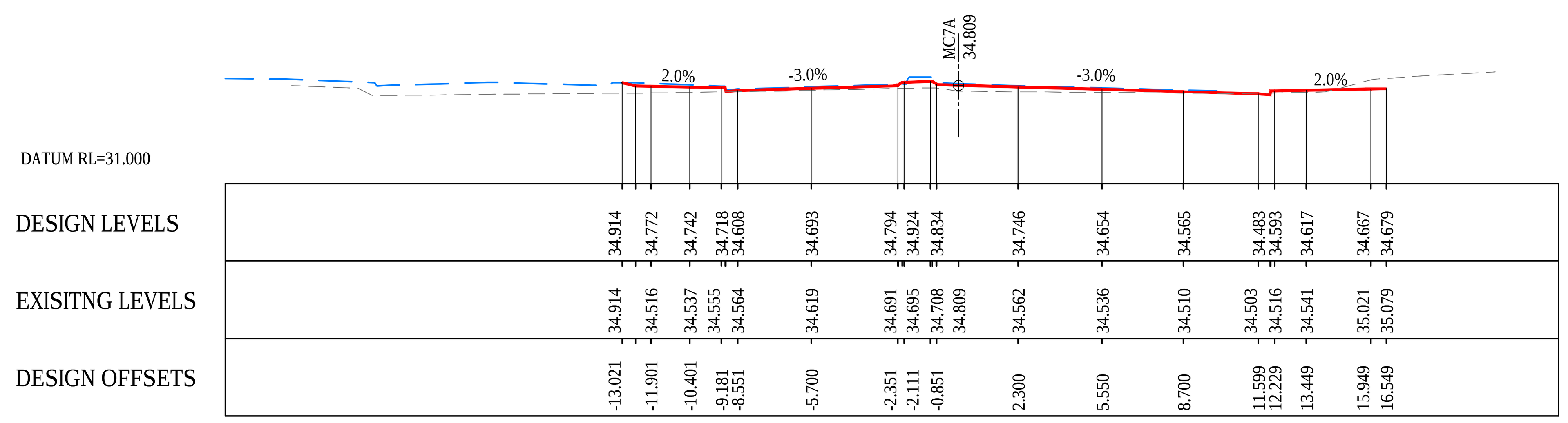

50.000

GLENGARRIE ROAD

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)
4 2 0 4 8 12 16 20
METRES

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GLENGARRIE ROAD (SHEET1 OF 2)

PLAN No: 110350-CC-814 H

FILE No: 110350-CC-814

SHEET SIZE: A1 ORIGINAL

AZIMUTH:
DATUM:
ORIGIN: M.G.A

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
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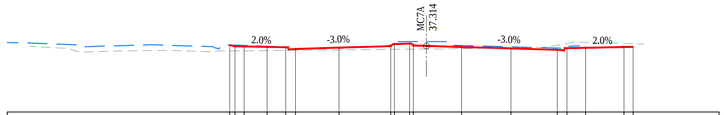
	AMENDMENT	DES	DRN	CKD	APR	DATE
H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

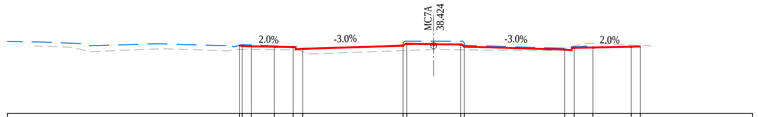
Plotted: 15 February , 2019 10:06:52 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-814.dwg



DATUM RL=33.000

DESIGN LEVELS	37.374	37.278	37.248	37.223	37.113	37.199	37.300	37.430	37.340	37.245	37.149	37.057	37.167	37.192	37.242	37.254
EXISITNG LEVELS	37.374	36.991	37.006	37.019	37.026	37.055	37.090	37.093	37.106	37.314	37.140	37.190	37.360	37.467	37.543	37.481	37.460
DESIGN OFFSETS	-12.839	-11.900	-10.400	-9.180	-8.550	-5.700	-2.329	-2.089	-0.850	2.300	5.517	8.550	9.180	10.400	12.900	13.500

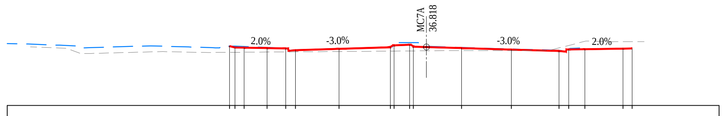
100.000



DATUM RL=34.000

DESIGN LEVELS	38.446	38.388	38.358	38.334	38.224	38.421	38.552	38.496	38.366	38.169	38.279	38.304	38.354	38.366
EXISITNG LEVELS	38.446	38.174	38.160	38.149	38.031	38.104	38.113	38.165	38.157	38.155	38.266	38.411	38.574	38.469	38.444
DESIGN OFFSETS	-12.683	-11.900	-10.400	-9.180	-8.550	-2.000	-1.760	1.760	2.000	8.550	9.180	10.400	12.900	13.500

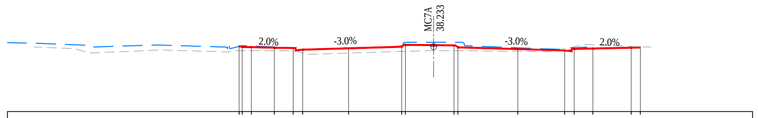
125.000



DATUM RL=33.000

DESIGN LEVELS	36.882	36.781	36.751	36.727	36.617	36.703	36.803	36.933	36.844	36.749	36.652	36.558	36.665	36.681	36.717	36.725
EXISITNG LEVELS	36.882	36.481	36.492	36.501	36.506	36.527	36.553	36.556	36.555	36.574	36.818	36.591	36.584	36.762	36.923	37.192	37.175	37.174
DESIGN OFFSETS	-12.856	-11.901	-10.401	-9.181	-8.551	-5.700	-2.351	-2.111	-0.851	2.300	5.550	8.660	9.294	10.348	12.836	13.432

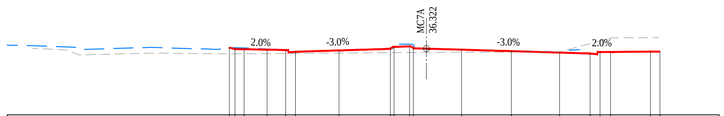
90.000



DATUM RL=34.000

DESIGN LEVELS	38.260	38.197	38.167	38.142	38.032	38.122	38.226	38.356	38.315	38.186	38.068	37.977	38.087	38.111	38.161	38.173
EXISITNG LEVELS	38.260	37.968	37.961	37.956	37.816	37.814	37.919	37.926	37.978	37.966	37.964	37.929	38.097	38.230	38.354	38.249	38.224
DESIGN OFFSETS	-12.704	-11.900	-10.400	-9.180	-8.550	-5.550	-2.090	-1.850	1.335	1.579	5.500	8.550	9.180	10.400	12.900	13.500

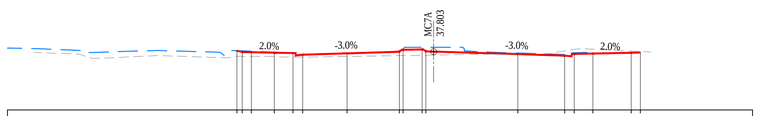
120.000



DATUM RL=32.000

DESIGN LEVELS	36.390	36.285	36.255	36.231	36.121	36.206	36.307	36.437	36.347	36.253	36.155	36.061	36.001	36.103	36.108	36.128	36.134
EXISITNG LEVELS	36.390	35.987	35.998	36.007	36.012	36.034	36.061	36.063	36.071	36.322	36.089	36.100	36.111	36.651	36.830	37.021	37.036
DESIGN OFFSETS	-12.872	-11.901	-10.401	-9.181	-8.551	-5.700	-2.351	-2.111	-0.851	2.300	5.550	8.700	10.099	11.337	12.023	14.623	15.245

80.000



DATUM RL=34.000

DESIGN LEVELS	37.865	37.766	37.736	37.711	37.601	37.688	37.791	37.921	37.818	37.637	37.546	37.656	37.680	37.730	37.742
EXISITNG LEVELS	37.865	37.493	37.476	37.452	37.450	37.490	37.542	37.545	37.565	37.576	37.803	37.645	37.857	37.948	37.962	37.848	37.820
DESIGN OFFSETS	-12.850	-11.900	-10.400	-9.180	-8.550	-5.650	-2.243	-2.003	-0.517	5.500	8.550	9.180	10.400	12.900	13.500

110.000

GLENGARRIE ROAD

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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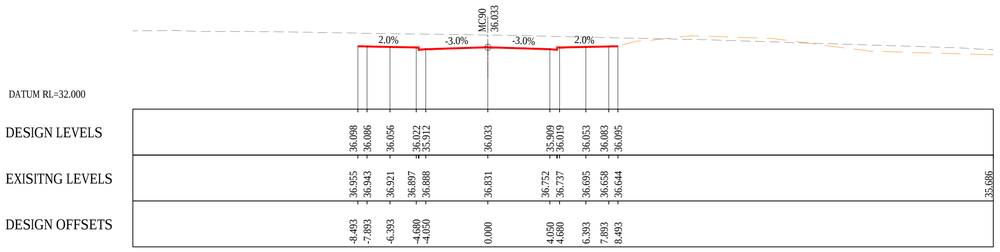
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GLENGARRIE ROAD (SHEET 2 OF 2)

PLAN No: 110350-CC-815 H
FILE No: 110350-CC-815
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:07:00 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-815.dwg



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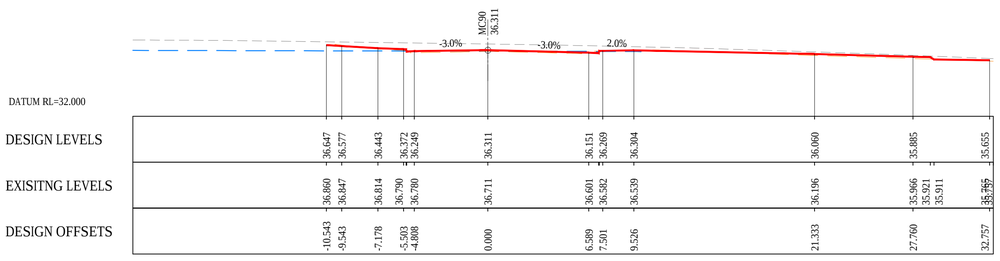
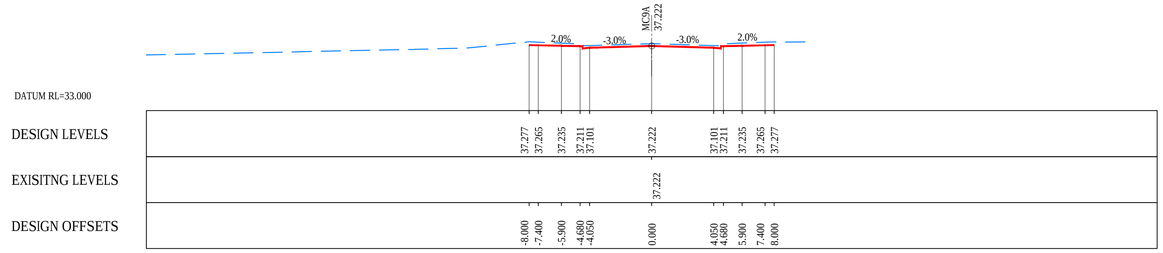


10.000

GLENABBY ROAD



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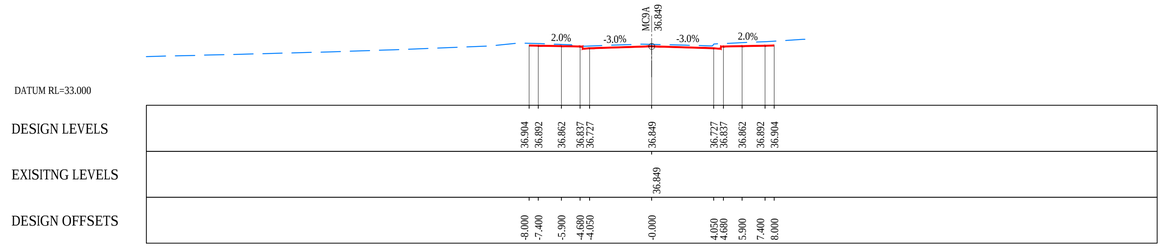

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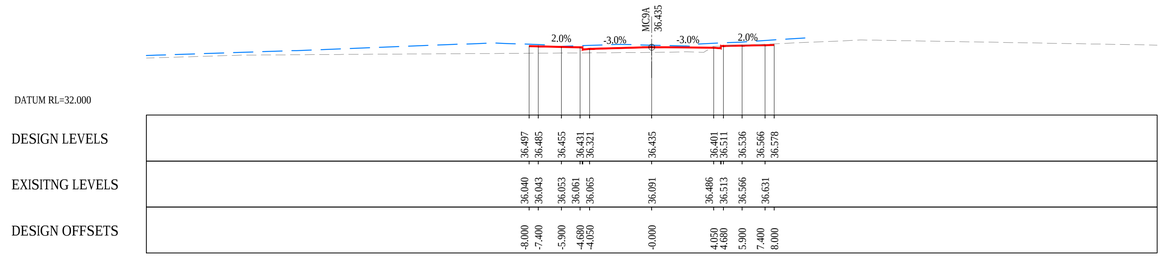
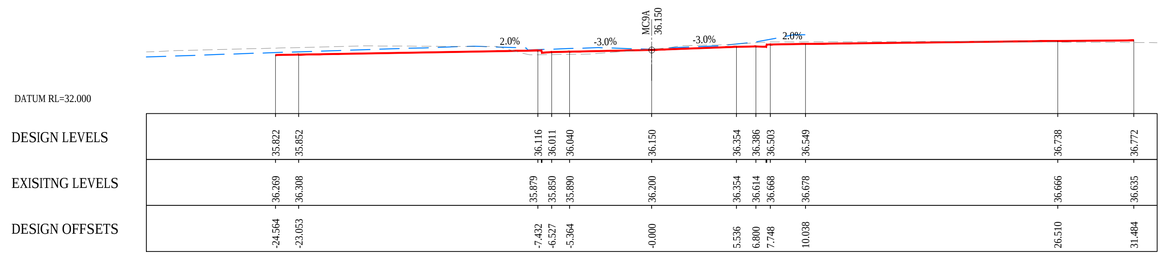


20.000



10.000

ALBATROSS AVENUE

LEGEND

- EXISTING SURFACE
- NEW ROAD SURFACE
- EXISTING PROPERTY BOUNDARY
- ALLAM HOMES SUBDIVISION SURFACE (FOR COMPARISON PURPOSES ONLY)
- NEW ROAD SURFACE (FOR COMPARISON PUROPSES ONLY)
- NEW PROPERTY BOUNDARY

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

H	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
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P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT: Stockland

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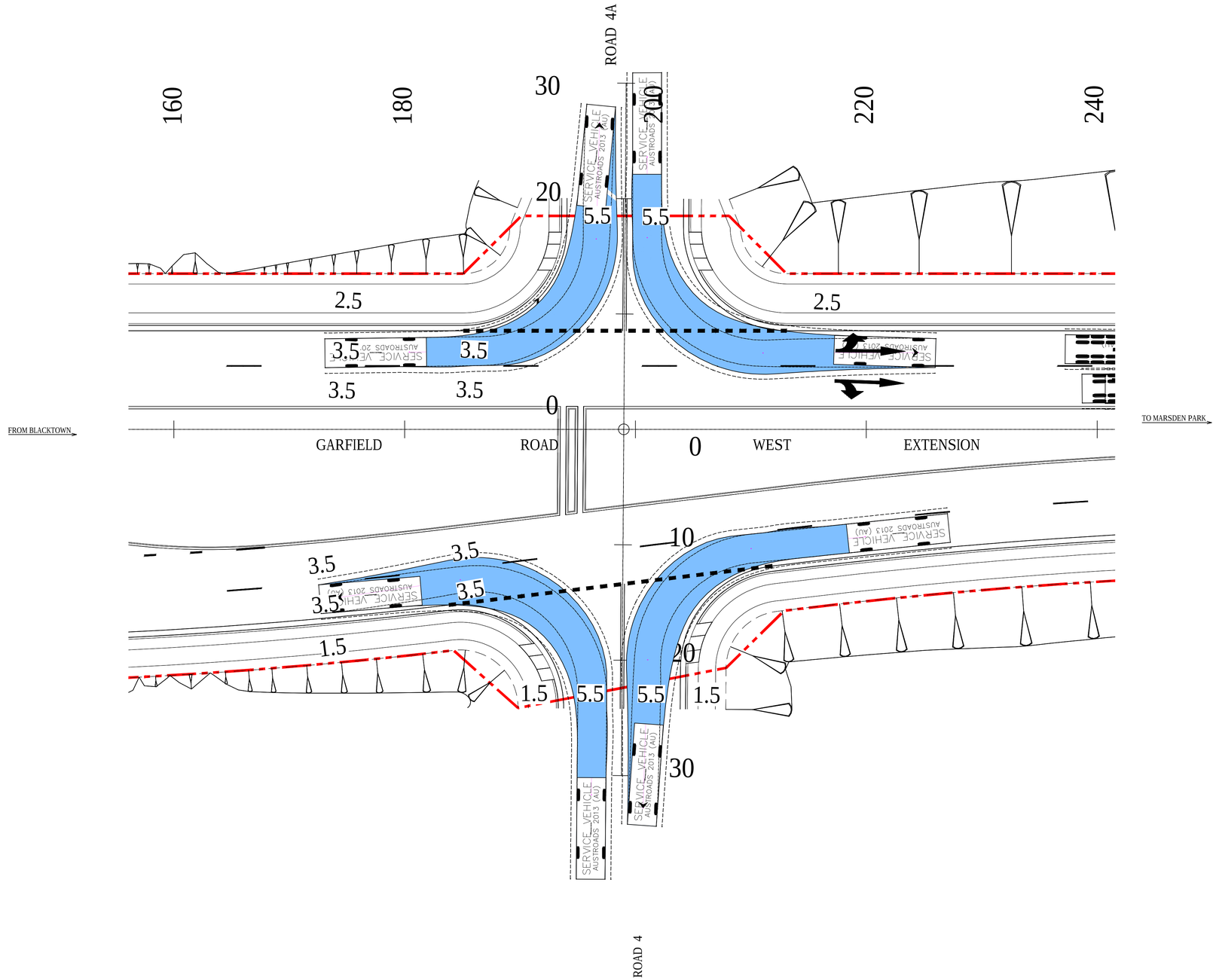
FOR CONSTRUCTION APPROVAL

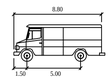
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

CROSS SECTIONS - GLENABBY ROAD AND ALBATROSS AVE

PLAN No: 110350-CC-816 H
FILE No: 110350-CC-816
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:07:07 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-816.dwg





SERVICE VEHICLE meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7

VEHICLE PROFILE

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

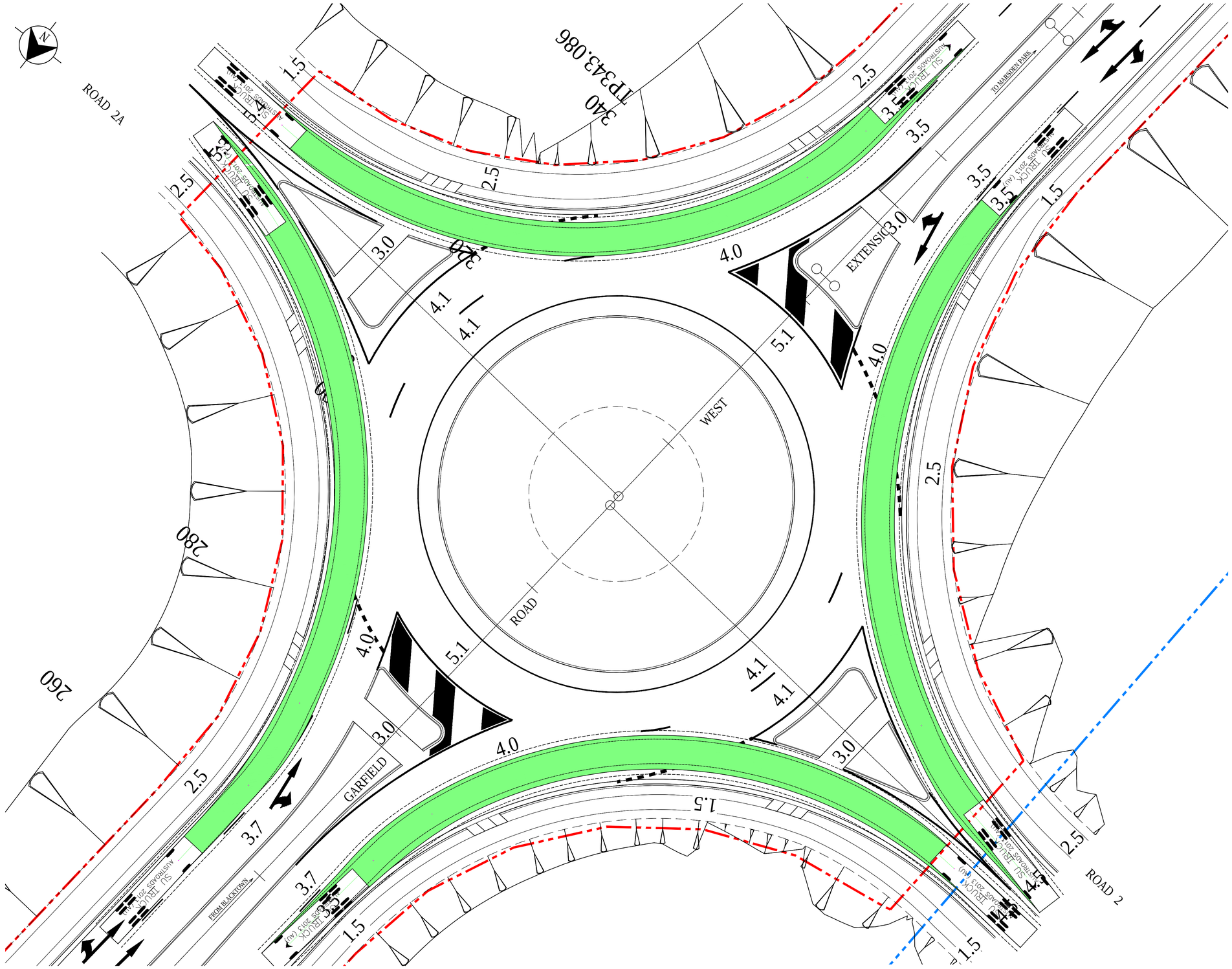
VEHICLE TURNING PATHS - ROAD 4 AND 4A

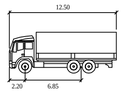
PLAN No: 110350-CC-900 I

FILE No: 110350-CC-900

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February ,2019 10:09:48 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-900.dwg





SU TRUCK	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

VEHICLE PROFILE

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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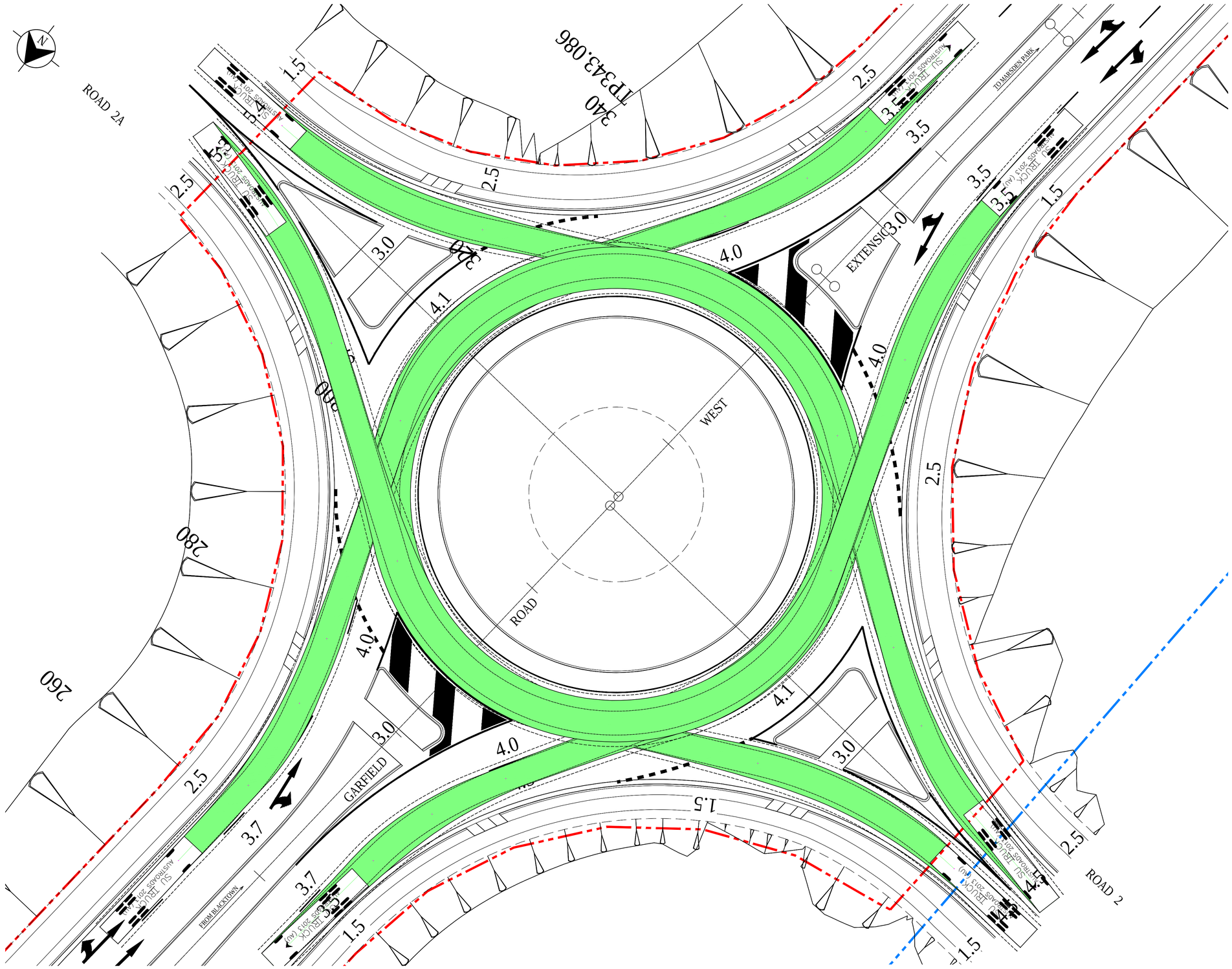
FOR CONSTRUCTION APPROVAL

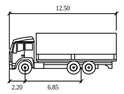
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

VEHICLE TURNING PATHS - ROAD 2 AND 2A (SHEET 1 OF 6)

PLAN No: 110350-CC-901 I
FILE No: 110350-CC-901
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:09:58 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-901.dwg





SU TRUCK meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

VEHICLE PROFILE

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

VEHICLE TURNING PATHS - ROAD 2 AND 2A (SHEET 2 OF 6)

PLAN No: 110350-CC-902 I
FILE No: 110350-CC-902
SHEET SIZE: A1 ORIGINAL

AZIMUTH:
DATUM:
ORIGIN: M.G.A

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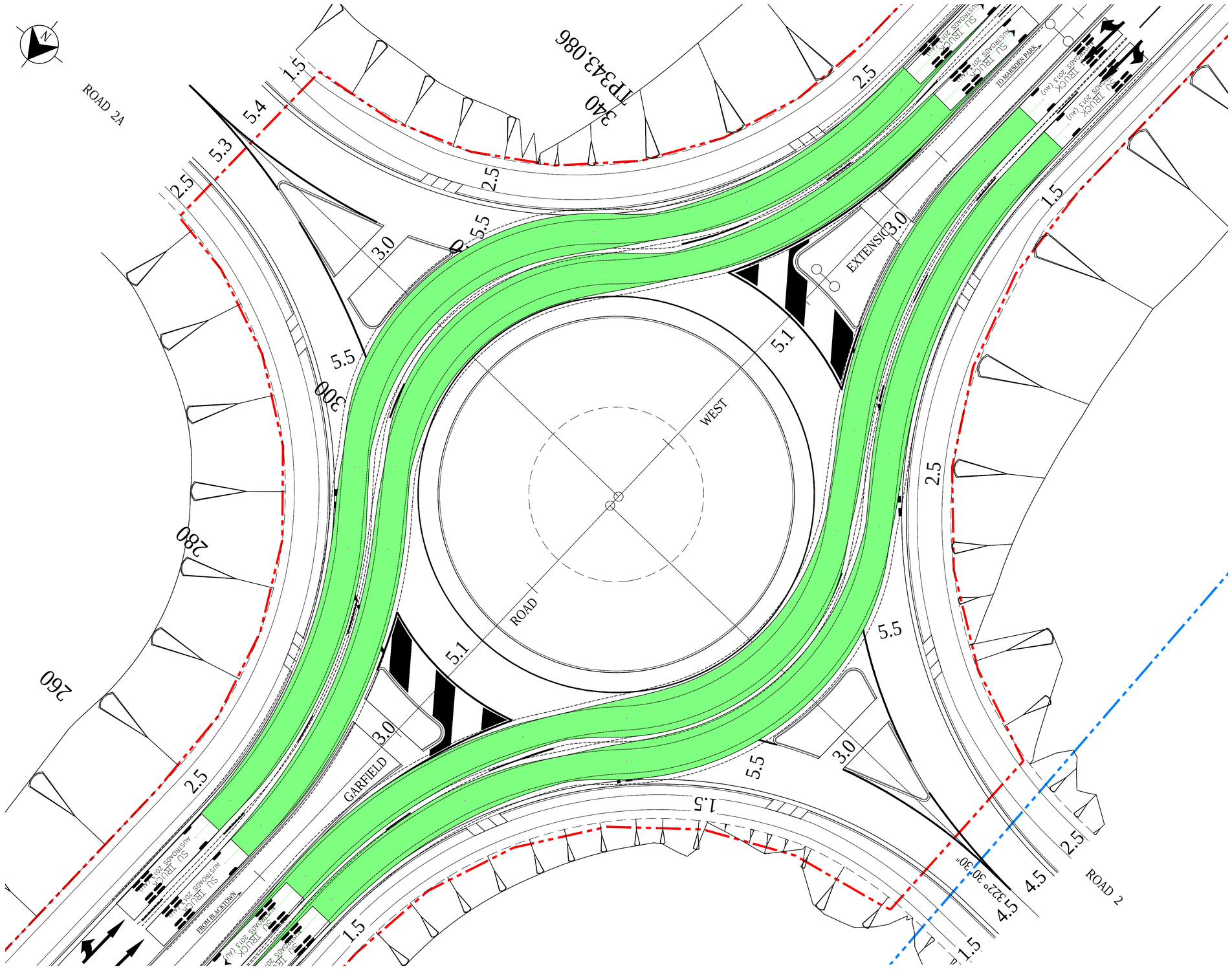
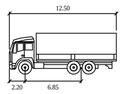
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

	AMENDMENT	DES	DRN	CKD	APR	DATE
I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18

Plotted: 15 February, 2019 10:10:08 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-902.dwg





SU TRUCK meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

VEHICLE PROFILE

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

VEHICLE TURNING PATHS - ROAD 2 AND 2A (SHEET 3 OF 6)

PLAN No: 110350-CC-903 I

FILE No: 110350-CC-903

SHEET SIZE: A1 ORIGINAL

	AMENDMENT	DES	DRN	CKD	APR	DATE
I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18

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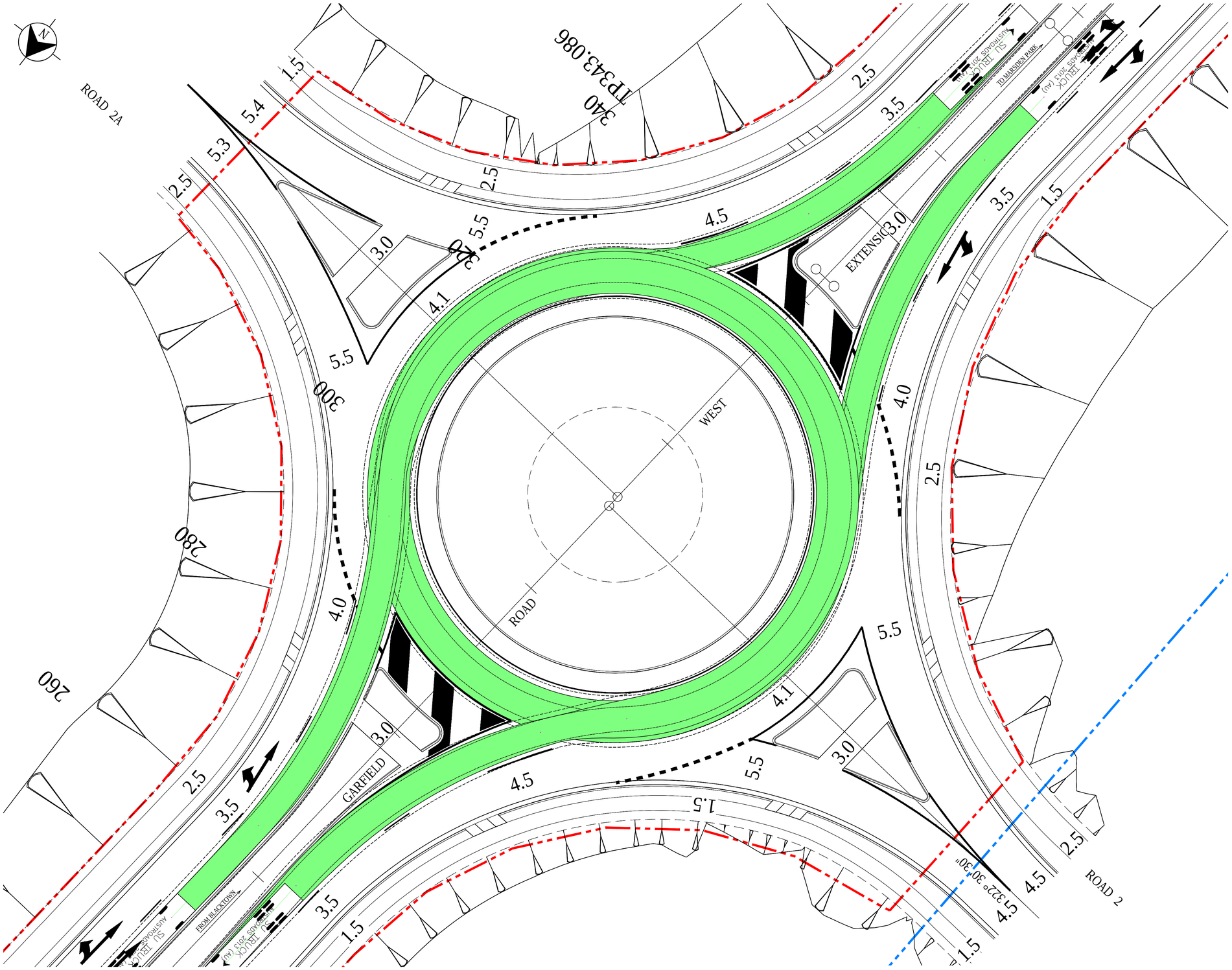
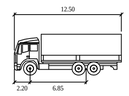
AZIMUTH:
DATUM:
ORIGIN: M.G.A

Plotted: 15 February, 2019 10:10:18 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-903.dwg





SU TRUCK meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

VEHICLE PROFILE

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

I	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
H	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
G	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
F	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
E	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	14/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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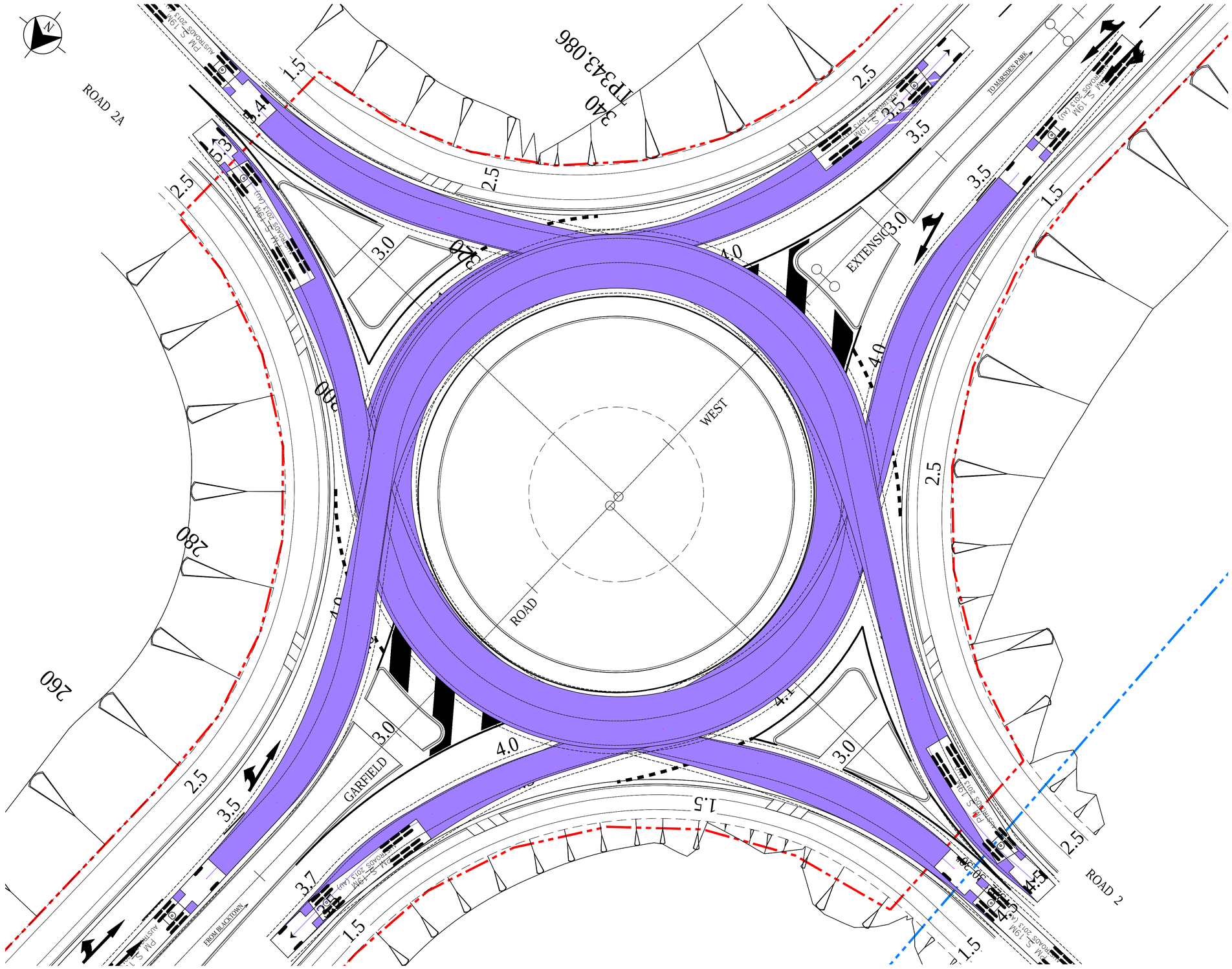
FOR CONSTRUCTION APPROVAL

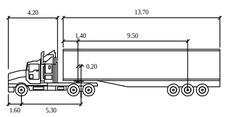
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

VEHICLE TURNING PATHS -ROAD 2 AND 2A (SHEET 4 OF 6)

PLAN No: 110350-CC-904 I
FILE No: 110350-CC-904
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:10:28 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-904.dwg





PM S 19M

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20
METRES

G	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
E	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
D	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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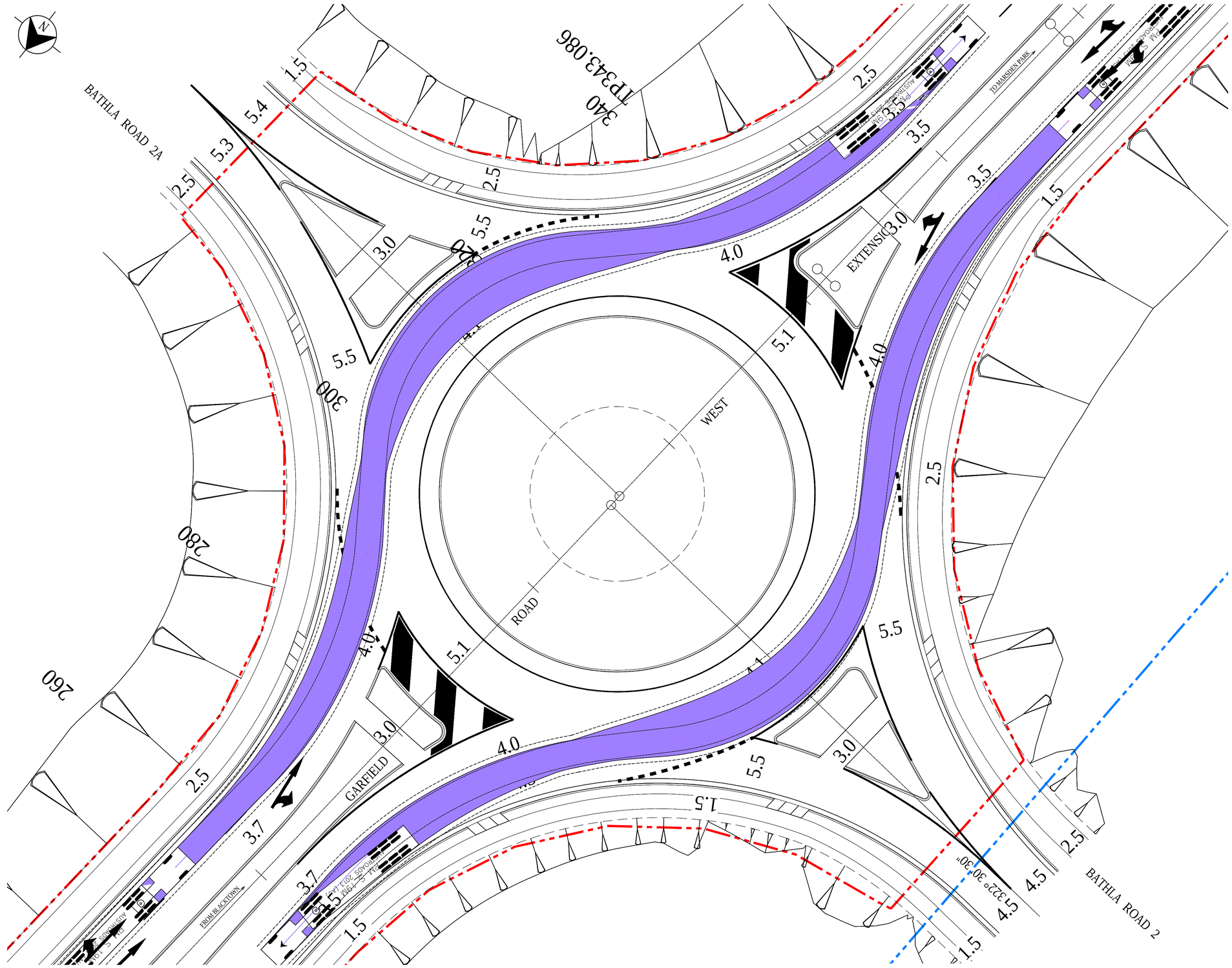
FOR CONSTRUCTION APPROVAL

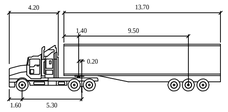
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

VEHICLE TURNING PATHS - ROAD 2 AND 2A (SHEET 5 OF 6)

PLAN No: 110350-CC-905 G
FILE No: 110350-CC-905
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:08:07 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-905.dwg





PM S 19M — meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

	AMENDMENT	DES	DRN	CKD	APR	DATE
G	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
E	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
D	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18

J. WYNDHAM PRINCE CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS

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AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

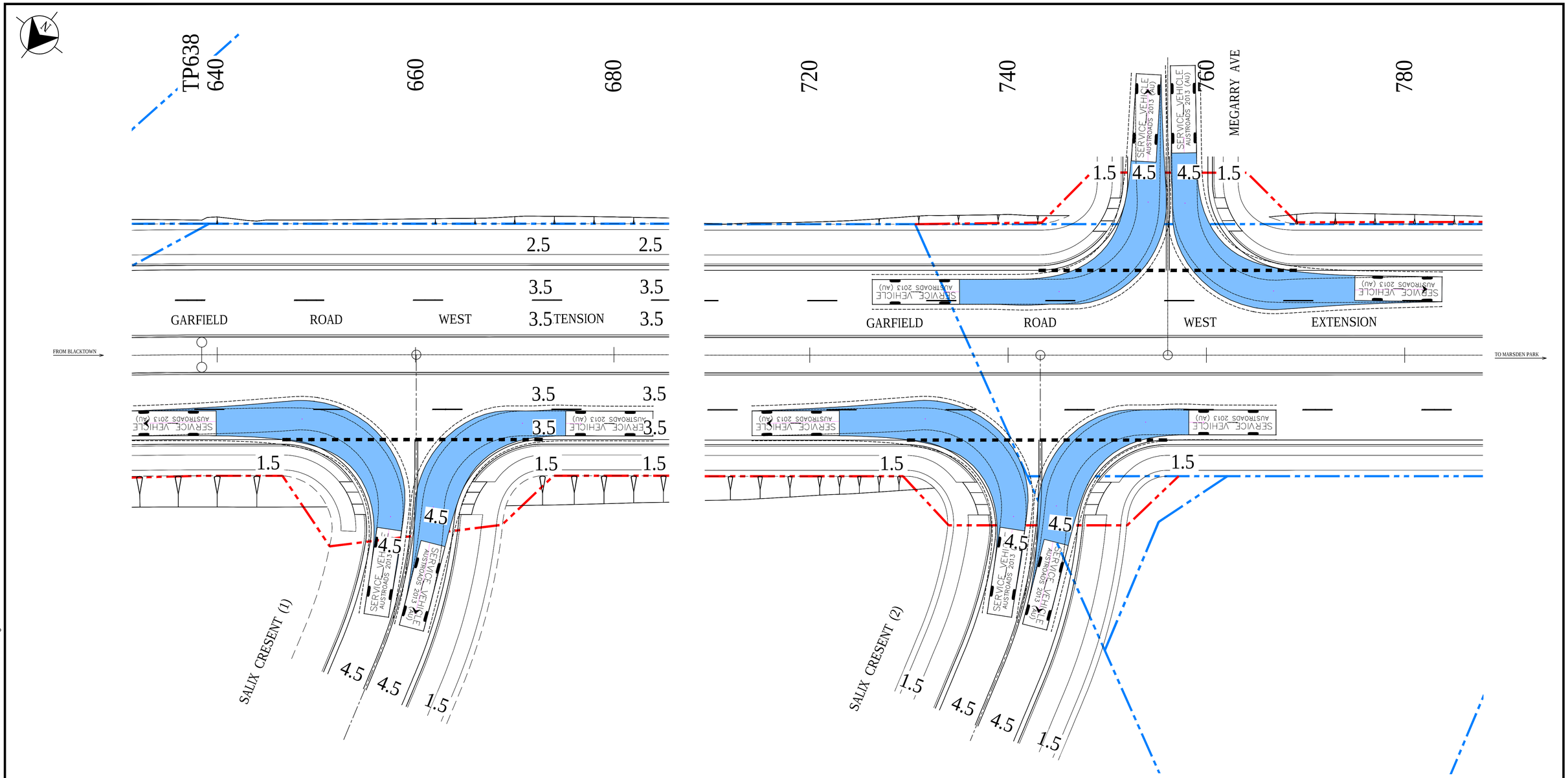
VEHICLE TURNING PATHS - ROAD 2 AND 2A (SHEET 6 OF 6)

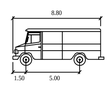
PLAN No: 110350-CC-906 G

FILE No: 110350-CC-906

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:08:18 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-906.dwg





SERVICE VEHICLE meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7

VEHICLE PROFILE

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

G	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
F	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	8/02/19
E	ISSUED FOR TENDER	M.J.P	T.L.J	R.O	P.M	7/02/19
D	ISSUED FOR REF APPROVAL	M.J.P	T.L.J	R.O.	D.J.	21/12/18
	AMENDMENT	DES	DRN	CKD	APR	DATE

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS & PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN: M.G.A

CLIENT: Stockland

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS SIGNED AS PART OF AN APPROVED CONSTRUCTION CERTIFICATE.

FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

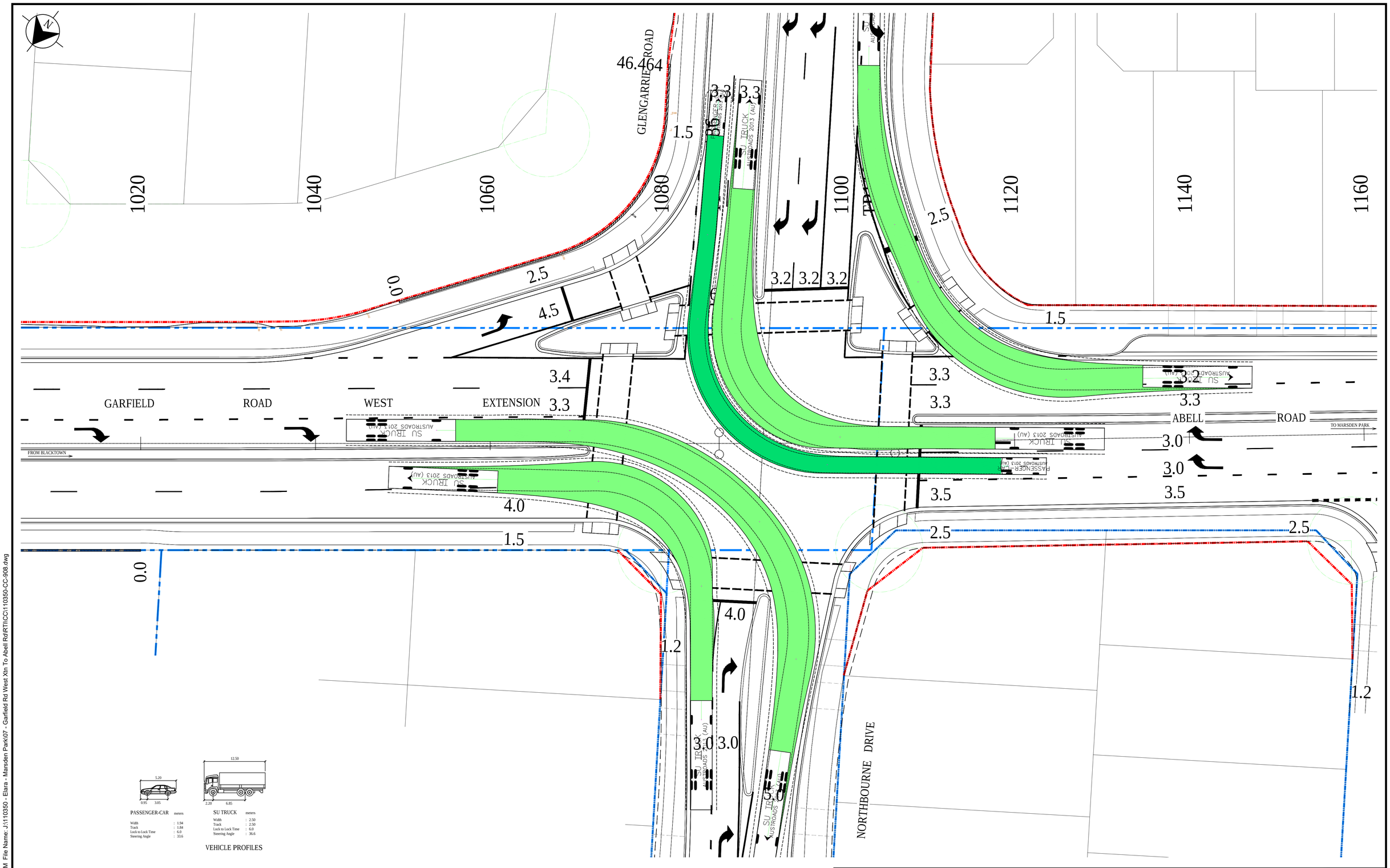
VEHICLE TURNING PATHS - SALIX CRESENT (1), SALIX CRESENT (2) AND MEGARRY AVE

PLAN No: 110350-CC-907 G

FILE No: 110350-CC-907

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:08:30 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\ICC\110350-CC-907.dwg



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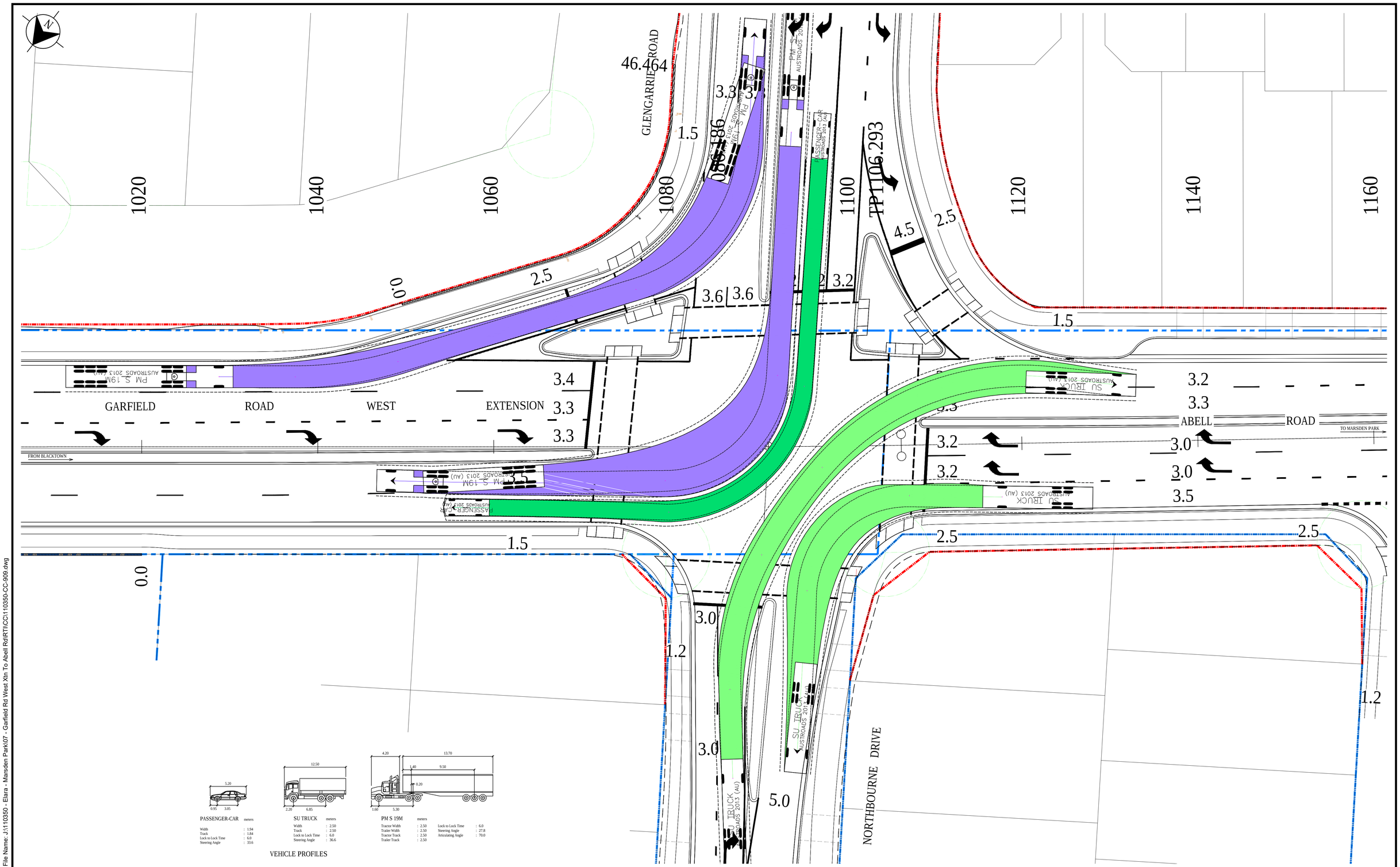
FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

VEHICLE TURNING PATHS - NORTHBOURNE DRIVE AND GLENGARRIE ROAD

PLAN No: 110350-CC-908 G
FILE No: 110350-CC-908
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:08:40 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RT\CC\110350-CC-908.dwg



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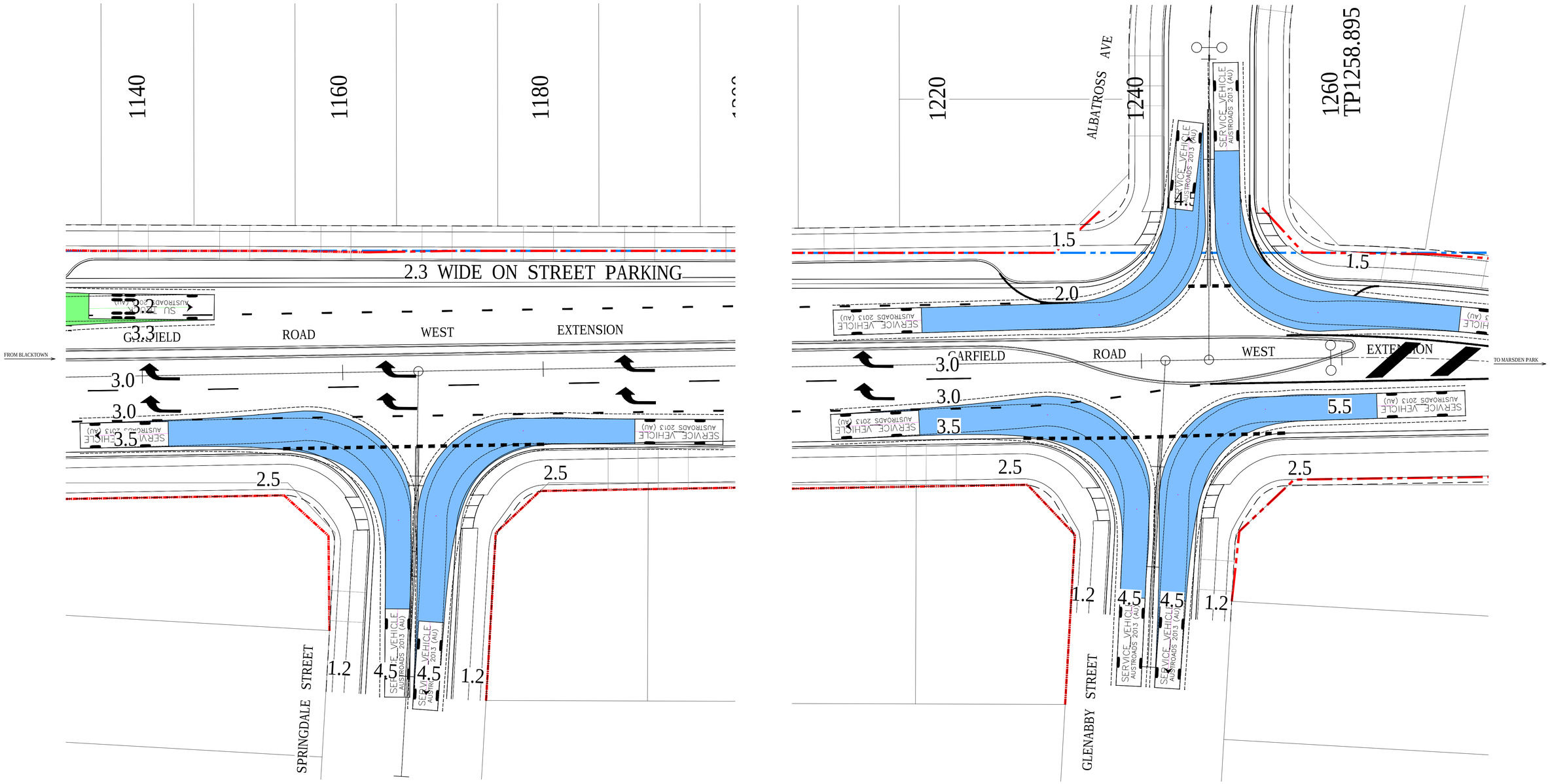
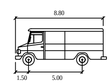
GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

VEHICLE TURNING PATHS - NORTHBOURNE DRIVE AND GLENGARRIE ROAD

PLAN No: 110350-CC-909 G
FILE No: 110350-CC-909
SHEET SIZE: A1 ORIGINAL

Plotted: 15 February , 2019 10:08:50 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-909.dwg





SERVICE VEHICLE meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7

VEHICLE PROFILE

1:200 (AT A1)
1:400 (AT A3)

4 2 0 4 8 12 16 20

METRES

G	ISSUE FOR CONSTRUCTION APPROVAL	M.J.P	T.L.J	H.B	P.M	15/02/19
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FOR CONSTRUCTION APPROVAL

GARFIELD ROAD WEST EXTENSION, MARSDEN PARK
RICHMOND ROAD TO ABELL ROAD

VEHICLE TURNING PATHS - SPRINGDALE RD, GLENABBY RD AND ALBATROSS AVE

PLAN No: 110350-CC-910 G

FILE No: 110350-CC-910

SHEET SIZE: A1 ORIGINAL

Plotted: 15 February, 2019 10:09:02 AM File Name: J:\110350 - Elara - Marsden Park\07 - Garfield Rd West Xtn To Abell Rd\RTI\CC\110350-CC-910.dwg

Part 5 – Specifications for the Reserve 990 Works

See following pages

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

PROJECT STATUS

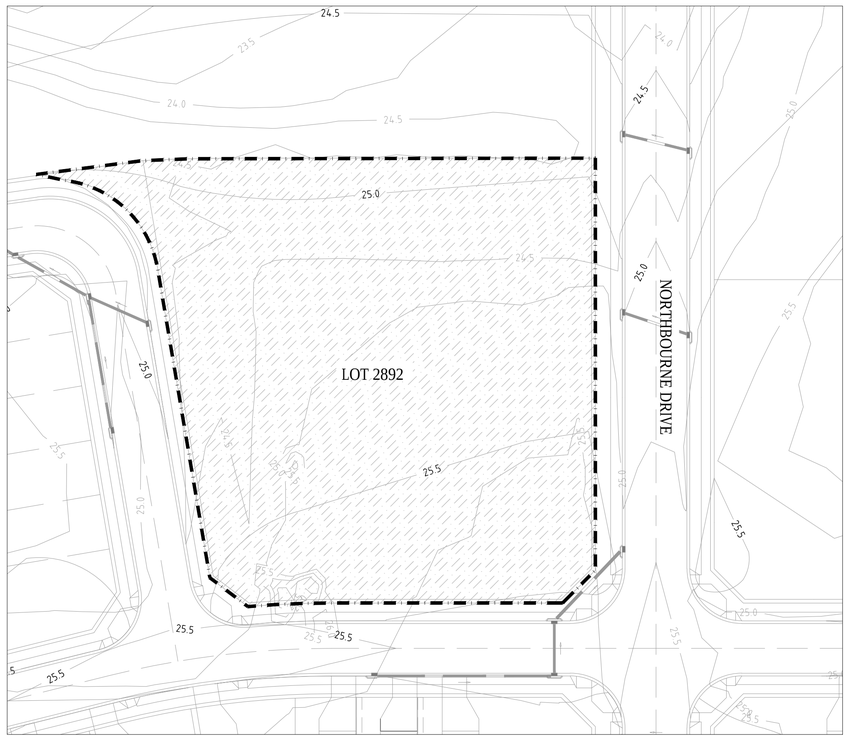
40% CD PACKAGE

DRAWING TITLE

LANDSCAPE DRAWINGS
COVER SHEET & DWG SCHEDULE

DRAWING REGISTER

DWG NO.	DESCRIPTION	SCALE	ISSUED FOR	ISSUE
18218-01-L000	- LANDSCAPE DRAWINGS - COVER SHEET & DWG SCHEDULE	N/A	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L001	- LANDSCAPE DRAWINGS - LEGEND & GENERAL NOTES	N/A	40% CONSTRUCTION DOCUMENTATION	C
18218-01-L002	- LANDSCAPE DRAWINGS - PLANTING PALETTE & SCHEDULE.	N/A	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L200	- LANDSCAPE DRAWINGS - GENERAL ARRAGEMENT	1:200 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L300	- LANDSCAPE DRAWINGS - SURFACE FINISHES	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L301	- LANDSCAPE DRAWINGS - SURFACE FINISHES	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L302	- LANDSCAPE DRAWINGS - SURFACE FINISHES	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L303	- LANDSCAPE DRAWINGS - SURFACE FINISHES	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L400	- LANDSCAPE DRAWINGS - LEVELS	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L401	- LANDSCAPE DRAWINGS - LEVELS	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L402	- LANDSCAPE DRAWINGS - LEVELS	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L403	- LANDSCAPE DRAWINGS - LEVELS	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L500	- LANDSCAPE DRAWINGS - PLANTING PLAN	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L501	- LANDSCAPE DRAWINGS - PLANTING PLAN	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L502	- LANDSCAPE DRAWINGS - PLANTING PLAN	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L503	- LANDSCAPE DRAWINGS - PLANTING PLAN	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L600	- LANDSCAPE DRAWINGS - JOINTING PLAN	1:100 @ A1	TO BE COMPLETED NEXT ISSUE	XX
18218-01-L601	- LANDSCAPE DRAWINGS - JOINTING PLAN	1:100 @ A1	TO BE COMPLETED NEXT ISSUE	XX
18218-01-L602	- LANDSCAPE DRAWINGS - JOINTING PLAN	1:100 @ A1	TO BE COMPLETED NEXT ISSUE	XX
18218-01-L603	- LANDSCAPE DRAWINGS - JOINTING PLAN	1:100 @ A1	TO BE COMPLETED NEXT ISSUE	XX
18218-01-L700	- LANDSCAPE DRAWINGS - SITE SECTIONS	1:100 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L701	- LANDSCAPE DRAWINGS - SITE SECTIONS	1:20 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L702	- LANDSCAPE DRAWINGS - SITE SECTIONS	1:50 @ A1	40% CONSTRUCTION DOCUMENTATION	A
18218-01-L900	- LANDSCAPE DRAWINGS - DETAILS	1:10 @ A1	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L901	- LANDSCAPE DRAWINGS - DETAILS	VARIES	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L915	- LANDSCAPE DRAWINGS - DETAILS	VARIES	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L910	- LANDSCAPE DRAWINGS - DETAILS	VARIES	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L920	- LANDSCAPE DRAWINGS - DETAILS	VARIES	40% CONSTRUCTION DOCUMENTATION	B
18218-01-L950	- LANDSCAPE DRAWINGS - PLANTING DETAILS	VARIES	40% CONSTRUCTION DOCUMENTATION	B



5m 0m 5m 10m 25m
SCALE: 1:500 @ A1 size sheet

APPROXIMATE PROJECT SITE LOCATION

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

GENERAL NOTES

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DO NOT SCALE FROM THE DRAWING

ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD PACKAGE

PROJECT TITLE
ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT
STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE
LANDSCAPE DRAWINGS
COVER SHEET & DWG SCHEDULE

REALM studios
city making + liveability

www.realmstudios.com

DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP
DATE 2018.11.xx	SCALE N/A		
PROJECT No. 18218	DRAWING NUMBER L000		REVISION B

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LEGEND

GENERAL

EXTENT OF WORKS
EXTENT OF WORKS

STRUCTURES

W1 — WALL TYPE 1 - DESCRIPTION
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

W2 — WALL TYPE 2 - DESCRIPTION
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

SS1 — SHADE STRUCTURE 001 - DESCRIPTION
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

STRUCTURES - PLAYGROUND

PLAY EQUIPMENT FALL ZONE
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

PE1 — PLAY EQUIPMENT TYPE 1 - VERTICAL PLAY
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

PE2 — PLAY EQUIPMENT TYPE 2 - SPINNER
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

PE3 — PLAY EQUIPMENT TYPE 3 - TODDLER SLIDE
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

PE4 — PLAY EQUIPMENT TYPE 4 - EXERCISE STATION
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

PE5 — PLAY EQUIPMENT TYPE 5 - ADULT SWING
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

PE6 — PLAY EQUIPMENT TYPE 6 - POST & ROPE COURSE
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

PE7 — PLAY EQUIPMENT TYPE 7 - TRAMPOLINES
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

PE8 — PLAY EQUIPMENT TYPE 7 - LOG STEPPERS
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

FURNITURE

F1 — BIN TYPE 1
REFER TO SPECIFICATION

F2 — BOLLARD TYPE 1
REFER TO SPECIFICATION

F3 — BOLLARD TYPE 2 - REMOVABLE
REFER TO SPECIFICATION

F4 — DRINKING FOUNTAIN
REFER TO SPECIFICATION

F5 — SEAT
REFER TO SPECIFICATION

F6 — PICNIC TABLE
REFER TO SPECIFICATION

F7 — BARBEQUE
REFER TO SPECIFICATION

F8 — TOPOGRAPHIC SEAT
REFER TO SPECIFICATION

SURFACE FINISHES

P1 — PAVEMENT TYPE 1 - INSITU CONCRETE
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P1A — PAVEMENT TYPE 1A - INSITU CONCRETE - TOPOGRAPHIC BIKE TRAIL
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P2 — PAVEMENT TYPE 2 - INSITU COLOUR CONCRETE
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P2A — PAVEMENT TYPE 2A - INSITU COLOUR CONCRETE
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P3 — PAVEMENT TYPE 3 - STABILISED GRAVEL
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P4 — PAVEMENT TYPE 4 - RUBBER SOFTFALL
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P4A — PAVEMENT TYPE 4A - RUBBER SOFTFALL
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P4B — PAVEMENT TYPE 4B - RUBBER SOFTFALL
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P4C — PAVEMENT TYPE 4C - RUBBER SOFTFALL
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P4D — PAVEMENT TYPE 4D - RUBBER SOFTFALL
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P4E — PAVEMENT TYPE 4E - RUBBER SOFTFALL
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P5 — PAVEMENT TYPE 5 - SAND SOFT FALL + SURFACE
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P6 — PAVEMENT TYPE 6- BARK SOFT FALL + SURFACE
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

P7 — PAVEMENT TYPE 7 - ARTIFICIAL TURF
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

INSITU CONCRETE - TOPOGRAPHIC BIKE TRAIL "RIPPLE ZONES"
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

EDGING

CE1 — CONCRETE EDGE TYPE 1 - 200mm WIDE
REFER TO DETAIL
REFER TO MATERIAL SCHEDULE

CE2 — CONCRETE EDGE TYPE 2 - 150mm WIDE
REFER TO DETAIL
REFER TO MATERIAL SCHEDULE

CE3 — CONCRETE EDGE TYPE 3 - 300mm WIDE
REFER TO DETAIL
REFER TO MATERIAL SCHEDULE

MS — MOWING STRIP - 150mm WIDE
REFER TO DETAIL
REFER TO MATERIAL SCHEDULE

JOINTS

EJ — EXPANSION JOINT
REFER TO DETAIL
REFER TO MATERIAL SCHEDULE

CJ — CONTROL JOINT
REFER TO DETAIL
REFER TO MATERIAL SCHEDULE

IJ — ISOLATION JOINT
REFER TO DETAIL
REFER TO MATERIAL SCHEDULE

DRAINAGE

WS — INDICATIVE WATER SUPPLY CONNECTION POINT.
REFER TO HYDRAULIC ENGINEERS DOCUMENTATION.

DP — INDICATIVE DRAINAGE POINT/OVERFLOW POINT.
REFER TO HYDRAULIC ENGINEERS DOCUMENTATION.

PLANTING

PROPOSED TREE
REFER TO PLANTING SCHEDULE & DETAIL X | LXXX

SHRUB ACCENT PLANTING
REFER TO PLANTING SCHEDULE & DETAIL X | LXXX

V1 — PLANTING - GROUNDCOVER SHRUB PLANTING
REFER TO PLANTING SCHEDULE & DETAIL X | LXXX

T1 — TURF
REFER TO MATERIAL SCHEDULE & DETAIL X | LXXX

LEVELS, GRADING & SETOUT

(10.00) — EXISTING LEVELS IN (BRACKETS)

10.00 — PROPOSED SPOT HEIGHT

TW 10.00 — PROPOSED TOP OF WALL

BW 10.00 — PROPOSED BOTTOM OF WALL

FALL 2% — FALL INDICATING DIRECTION AND GRADE

2 — LINEAR DIMENSION

12 — DIAMETER DIMENSION

R1 — RADIUS DIMENSION

3.14 — ARC DIMENSION

23 — ANGLE DEGREES

SP 001 — SETOUT POINT

CL — CENTER LINE

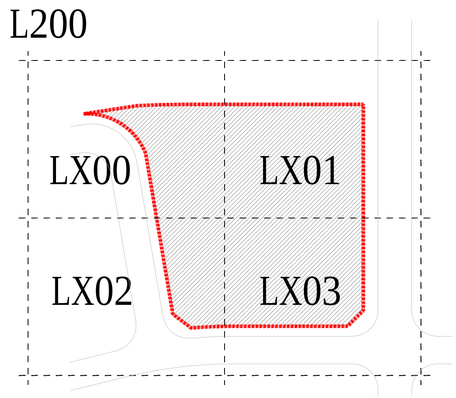
TYP. — TYPICAL MEASUREMENT

EQ — EQUALS MEASUREMENT

DIA. / Ï — DIAMETER

TEXT LABEL

KEY PLAN



PLANTING SCHEDULE

NOTE:
1. EXACT LOCATIONS OF PLANT MATERIALS SHALL BE REVIEWED BY THE SUPERINTENDENT PRIOR TO INSTALLATION. THE SUPERINTENDENT RESERVES THE RIGHT TO ADJUST PLANTS TO EXACT LOCATIONS IN THE FIELD.
2. LANDSCAPE CONTRACTOR IS TO PEG ALL TREE LOCATIONS TO THE SUPERINTENDENT'S APPROVAL PRIOR TO INSTALLATION
3. SUPERINTENDENT TO REVIEW ALL PLANT MATERIALS AT SOURCE OR BY PHOTOGRAPH PRIOR TO DIGGING AND DELIVERY TO SITE.
4. PRIOR TO INSTALLATION OF PLANTING AND IRRIGATION CONTRACTOR TO PREPARE SOIL AS SPECIFIED.

CAD Code	Botanic Name	Common Name	Height (m)	Spread (m)	Spacing (m)	Pot Size
	Trees					
Ace bue	Acer buergerianum	Trident Maple	9		REFER PLAN	100L
Ulm par	Ulmus parvifolia	Chinese Elm	10	11	REFER PLAN	100L
Euc fib	Eucalyptus fibrosa	Broad-Leafed Ironbark	20		REFER PLAN	100L
Euc ter	Eucalyptus tereticornis	Forest Red Gum	20	6	REFER PLAN	100L
Gre hon	Grevillea 'Honey Gem'		5		REFER PLAN	75L
Mel dec	Melaleuca decora	White Feather Honey Myrtle	10	4	REFER PLAN	75L
Mel lin	Melaleuca linearifolia	Snow in Summer	7	6	REFER PLAN	75L
	Shrubs					
Aus dul	Austromyrtus dulcis	Midgenberry	1		-	5L
Ech can	Echium candicans	Pride of Madeira	2.5	2	-	5L
Gre hon	Grevillea 'Honey Gem'		5		-	5L
Lav sto	Lavandula stoechas 'Avonview'	French Lavender	0.15	0.15	-	150mm
Wes fru	Westrinigia fruticosa	Coastal Rosemary	1.5		-	5L
	Groundcovers/ Climbers					
Har vio	Hardenbergia violacea	Purple Coral Pea	0.2		-	150mm
Fic nod	Ficinia nodosa	Knobbly Club Rush	0.6		-	150mm
Jun usi	Juncus usitatus	Common Rush	1	0.5	-	150mm
Lom tan	Lomandra tanika	Spiny-head Mat-rush	1	1	-	150mm
Poa lab	Poa labillardieri	Common Tussock Grass	0.6		-	150mm

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

1m 0m 1m 2m 5m
SCALE: 1:100 @ A1 size sheet

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B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP
C	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE
ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT
STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE
LANDSCAPE DRAWINGS
LEGEND & GENERAL NOTES

REALM studios
city making + liveability
www.realmstudios.com

DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP
DATE	SCALE		
2018.11.xx	N/A		
PROJECT No.	DRAWING NUMBER		REVISION
18218	L001		C

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MATERIAL SCHEDULE

SURFACE FINISHES

P1 PAVEMENT TYPE 1 - INSITU CONCRETE
REFER TO SPECIFICATION

P5 PAVEMENT TYPE 5 - SAND SOFT FALL
REFER TO SPECIFICATION

P1A PAVEMENT TYPE 1A - INSITU CONCRETE - TOPOGRAPHIC BIKE TRAIL
REFER TO SPECIFICATION

P6 PAVEMENT TYPE 6- BARK SOFT FALL
REFER TO SPECIFICATION

P2 PAVEMENT TYPE 2 - INSITU COLOUR CONCRETE
REFER TO SPECIFICATION

P7 PAVEMENT TYPE 7 - ARTIFICIAL TURF
REFER TO SPECIFICATION

P2A PAVEMENT TYPE 2A - INSITU COLOUR CONCRETE
REFER TO SPECIFICATION

CE CONCRETE EDGING -
REFER TO SPECIFICATION

P3 PAVEMENT TYPE 3 - STABILISED GRAVEL
REFER TO SPECIFICATION

P4 PAVEMENT TYPE 4 - 4E - RUBBER SOFTFALL
REFER TO SPECIFICATION

STRUCTURES & FURNITURE

TO BE CONFIRMED

SS1 COMMUNITY SHELTER
REFER TO SPECIFICATION

PE4 PLAY EQUIPMENT TYPE 4 - POLYMETRIC BOX SET
REFER TO SPECIFICATION

F3 BOLLARD TYPE 2 - REMOVABLE
REFER TO SPECIFICATION

PE1 PLAY EQUIPMENT TYPE 1 - SWINGS
REFER TO SPECIFICATION

PE4 PLAY EQUIPMENT TYPE 4 - RECUMBENT BIKE
REFER TO SPECIFICATION

F4 DRINKING FOUNTAIN
REFER TO SPECIFICATION

PE2 PLAY EQUIPMENT TYPE 2 - SPINNER
REFER TO SPECIFICATION

PE6 PLAY EQUIPMENT TYPE 6 - POST & ROPE COURSE
REFER TO SPECIFICATION

F5 SEAT
REFER TO SPECIFICATION

PE3 PLAY EQUIPMENT TYPE 3 - TODDLER SLIDE
REFER TO SPECIFICATION

PE7 PLAY EQUIPMENT TYPE 7 - TRAMPOLINE
REFER TO SPECIFICATION

F6 PICNIC TABLE
REFER TO SPECIFICATION

PE4 PLAY EQUIPMENT TYPE 4 - BENCH
REFER TO SPECIFICATION

PE8 PLAY EQUIPMENT TYPE 7 - LOG STEPPERS
REFER TO SPECIFICATION

F7 BARBEQUE -
REFER TO SPECIFICATION

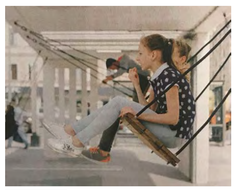
PE4 PLAY EQUIPMENT TYPE 4 - DIPS & LEG RAISES
REFER TO SPECIFICATION

F1 BIN TYPE 1
REFER TO SPECIFICATION

F8 TOPOGRAPHIC SEAT
REFER TO SPECIFICATION

PE4 PLAY EQUIPMENT TYPE 4 - DOUBLE PULL UP
REFER TO SPECIFICATION

F2 BOLLARD TYPE 1
REFER TO SPECIFICATION



PE5 ADULT SWING SEAT
REFER TO SPECIFICATION

PLANTING

ACE bue Acer buergerianum - *Trident Maple*

AUS dul Austromyrtus dulcis - Midgenberry

ULM par Ulmus parvifolia - *Chinese Elm*

ECH can Echium candicans - Pride of Madeira

EUC ter Eucalyptus tereticornis - *Forest Red Gum*

LAV sto Lavandula stoechas 'Avonview' - French Lavander

GRE hon Grevillea 'Honey Gem'

WES fru Westringia fruticosa - Coastal Rosemary

MEL dec Melaleuca decora - *White Feather Honey Myrtle*

HAR vio Hardenbergia violacea - Purple Coral Pea

MEL lin Melaleuca linearifolia - *Snow in Summer*

FIC nod Ficinia nodosa - Knobbly Club Rush

EUC fib Eucalyptus fibrosa - *Broad-Leafed Ironbark*

JUN usi Juncus usitatus - Common Rush

POA lab Poa labillardieri - *Common Tussock Grass*

LOM tan Lomandra tanika - *Spiny-Head Mat Rush*

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

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DO NOT SCALE FROM THE DRAWING

ISSUE	DATE	AMENDMENTS	APP
A	29.11.18	FOR INFORMATION	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
PLANTING PALETTE & SCHEDULE.

REALM studios

city making + liveability

www.realmstudios.com

DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP

DATE	SCALE
2018.11.29	N/A

PROJECT No.	DRAWING NUMBER	REVISION
18218	L002	B

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

2m 0m 2m 4m 10m

SCALE: 1:200 @ A1 size sheet

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ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
GENERAL ARRAGEMENT

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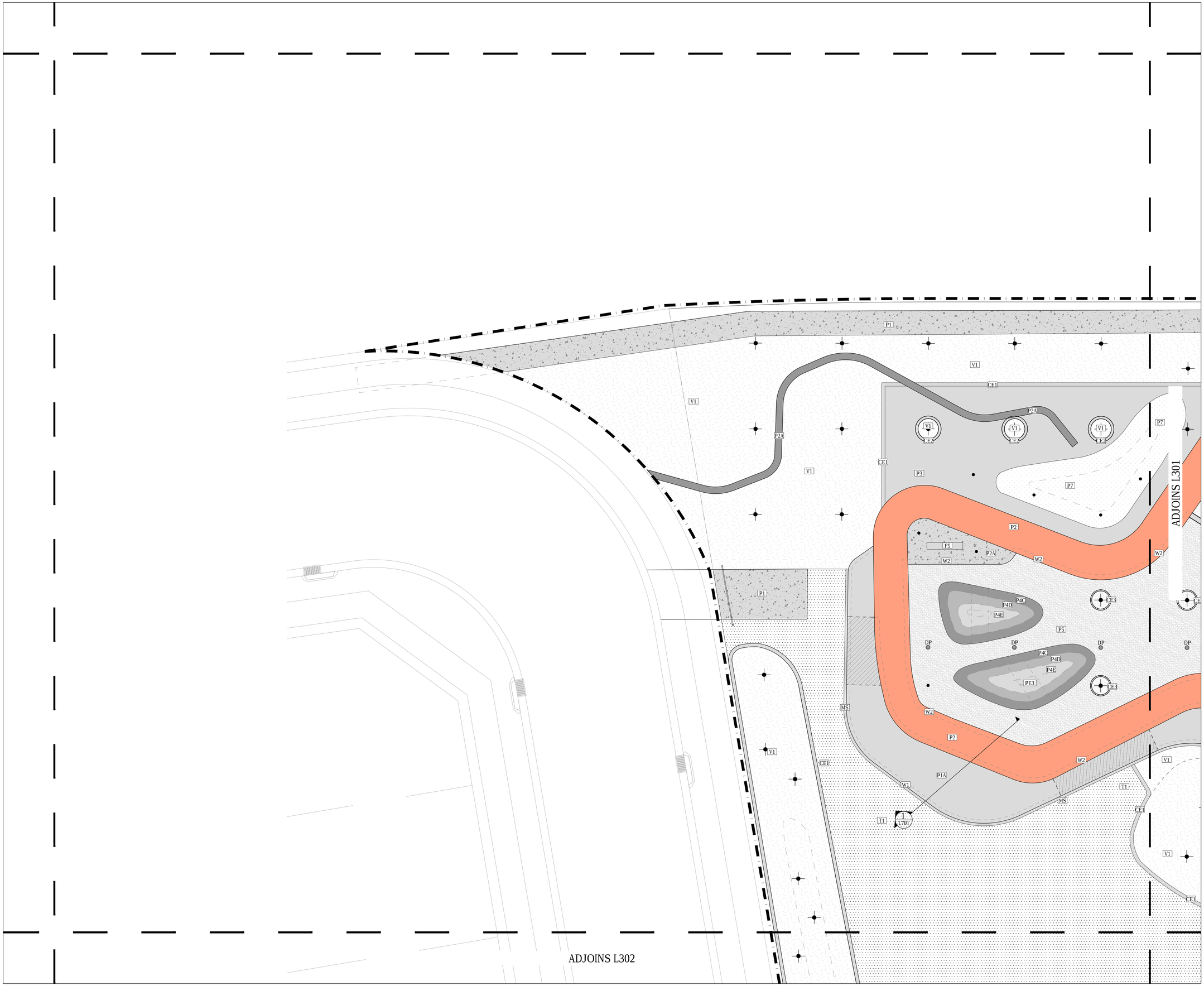
DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:200 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L200	B



CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

KEYPLAN

NOTE - TREE CANOPIES REMOVED FOR CLARITY

1m 0m 1m 2m 5m

SCALE: 1:300 @ A1 size sheet

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ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
SURFACE FINISHES

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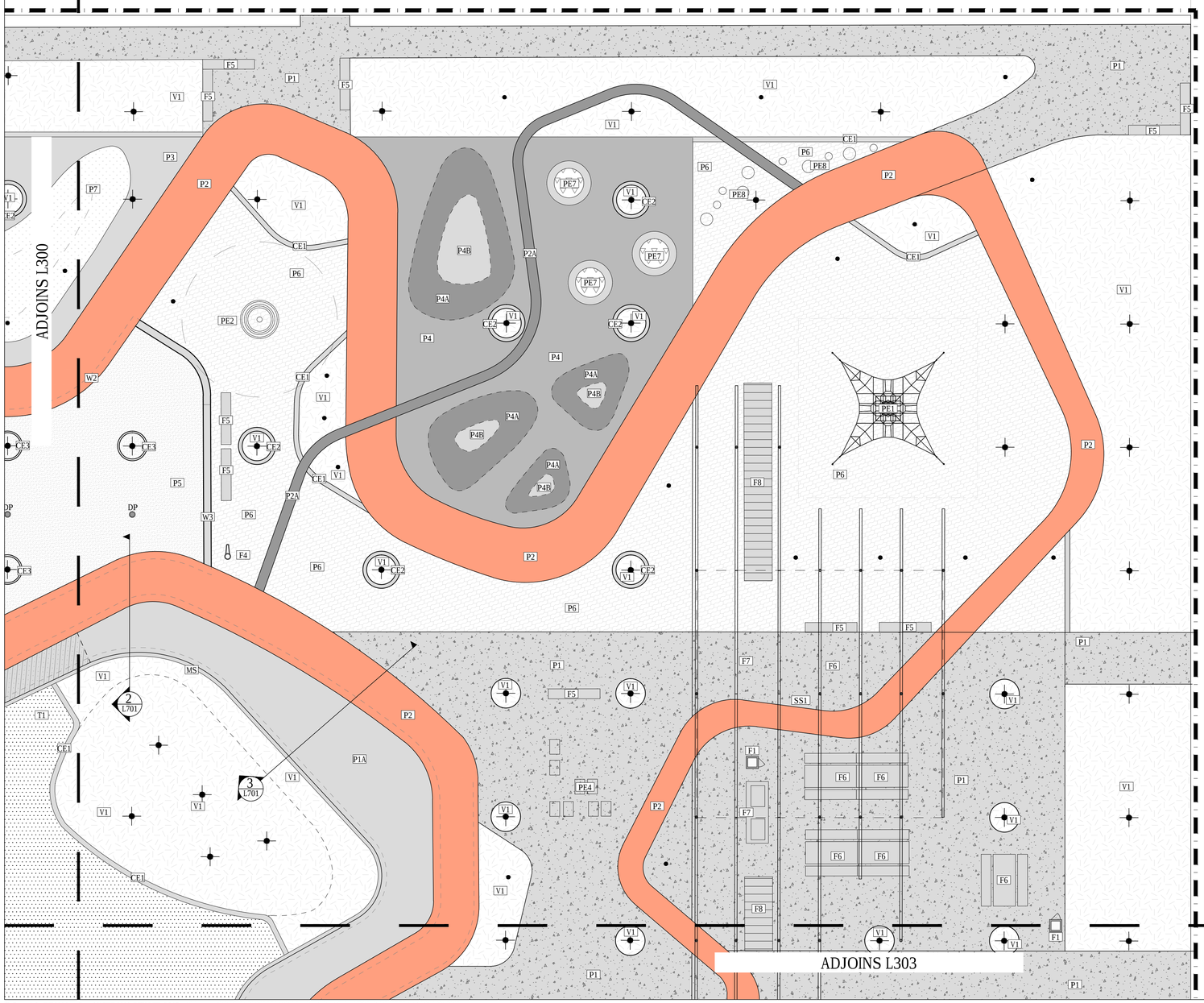
DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP
DATE	SCALE		
2018.11.xx	1:100 @ A1		
PROJECT No.	DRAWING NUMBER		REVISION
18218	L300		B

10 January 2019 | S:\04 PROJECTS\18218 ELARA PARK 2\CAD\AUTOCAD\6 SHEETS\18218-01-L300.DWG



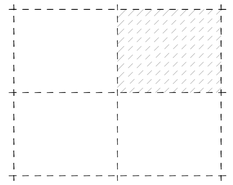
CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

KEYPLAN



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1m 0m 1m 2m 5m

SCALE: 1:100 @ A1 size sheet

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ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
SURFACE FINISHES

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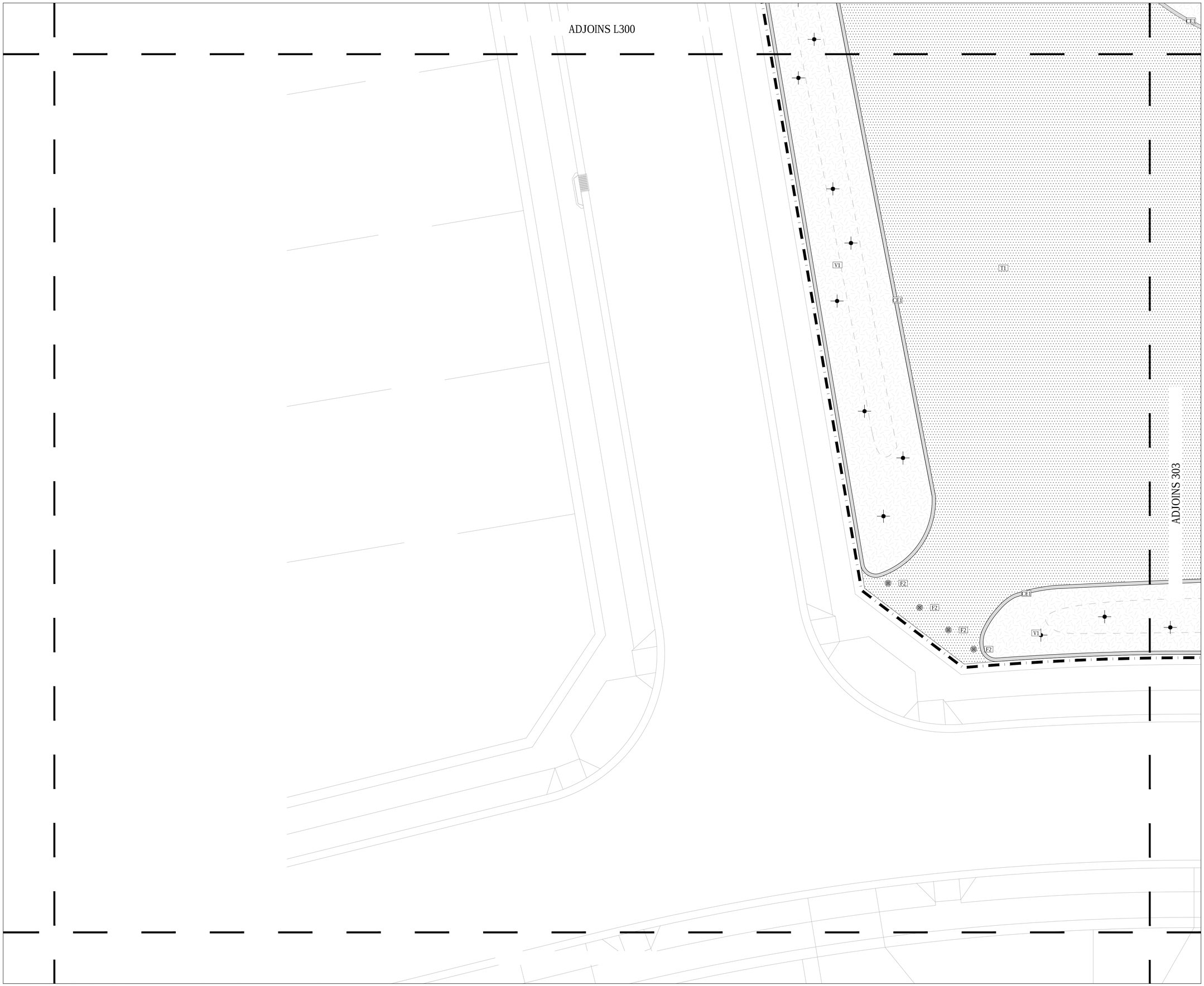
#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L301	B



CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

KEYPLAN

NOTE - TREE CANOPIES REMOVED FOR CLARITY

1m 0m 1m 2m 5m

SCALE: 1:100 @ A1 size sheet

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ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
SURFACE FINISHES

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#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L302	B

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

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KEYPLAN

NOTE - TREE CANOPIES REMOVED FOR CLARITY

1m 0m 1m 2m 5m

SCALE: 1:100 @ A1 size sheet

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ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
SURFACE FINISHES

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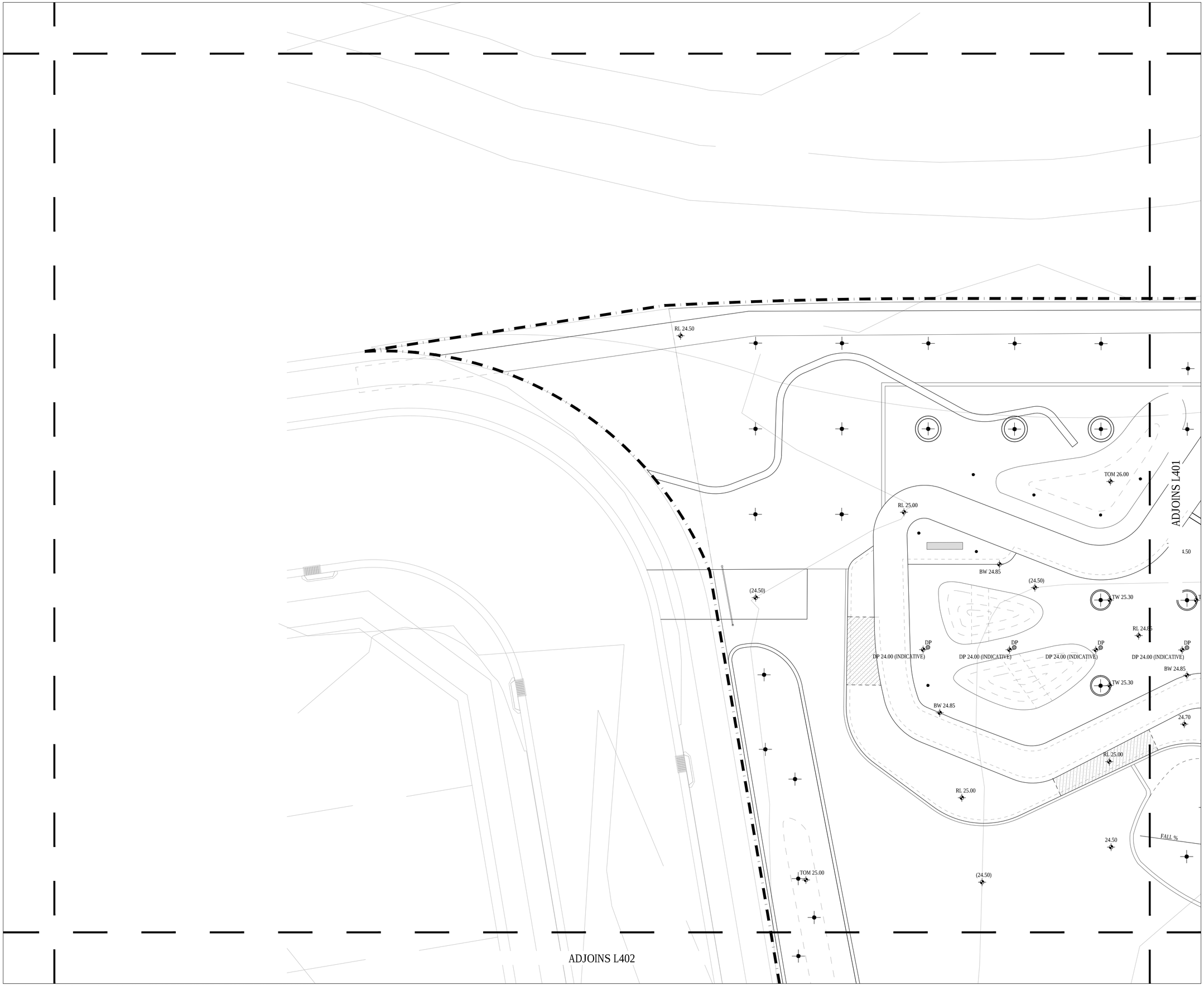
#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L303	B



CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

KEYPLAN

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1m 0m 1m 2m 5m

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ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
LEVELS

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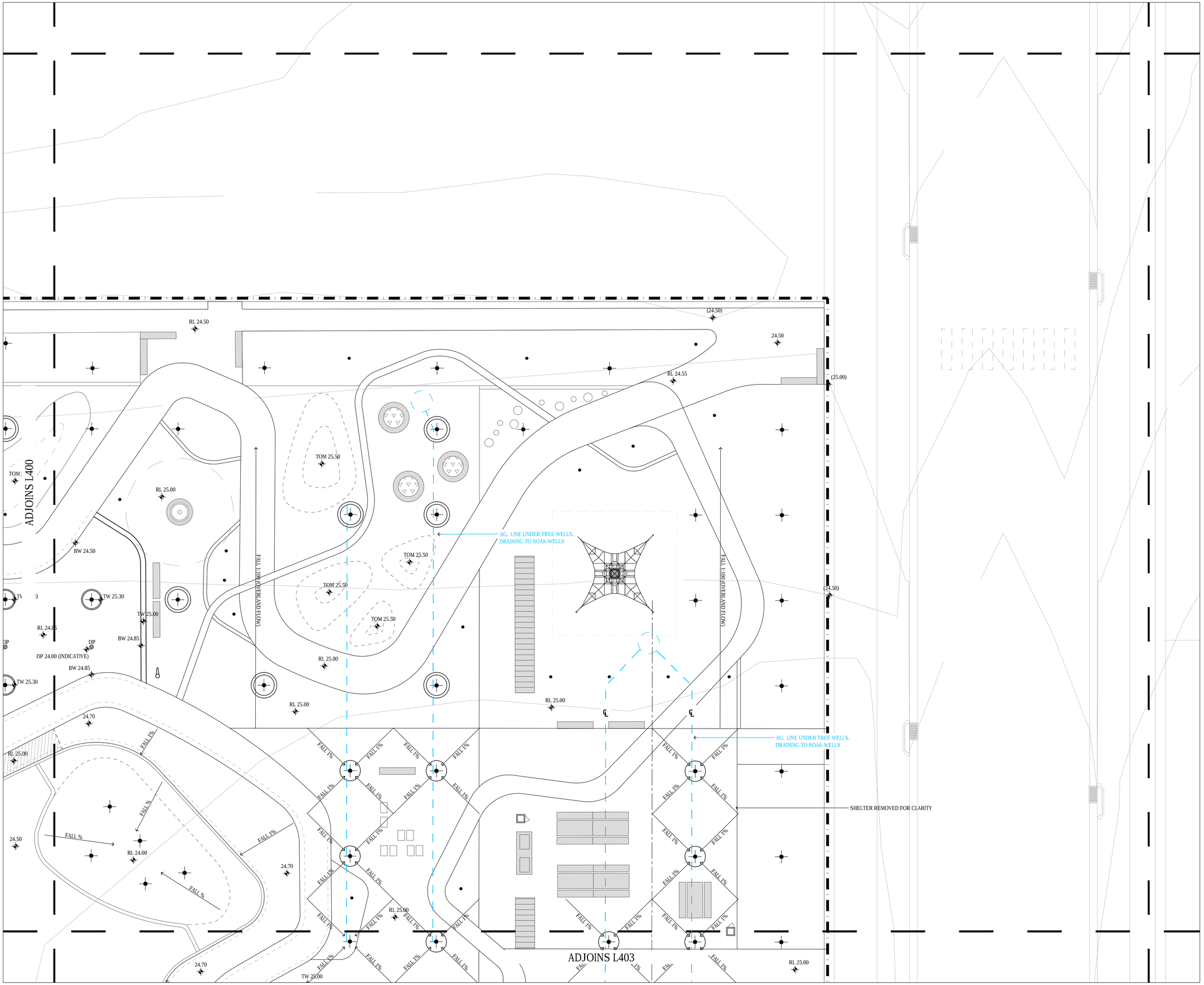
DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L400	B



10 January 2019 | S:\04 PROJECTS\18218 ELARA PARK 2\CAD\AUTOCAD\6 SHEETS\18218-01-L401.DWG

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

KEYPLAN

NOTE - TREE CANOPIES REMOVED FOR CLARITY

1m 0m 1m 2m 5m

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PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
LEVELS

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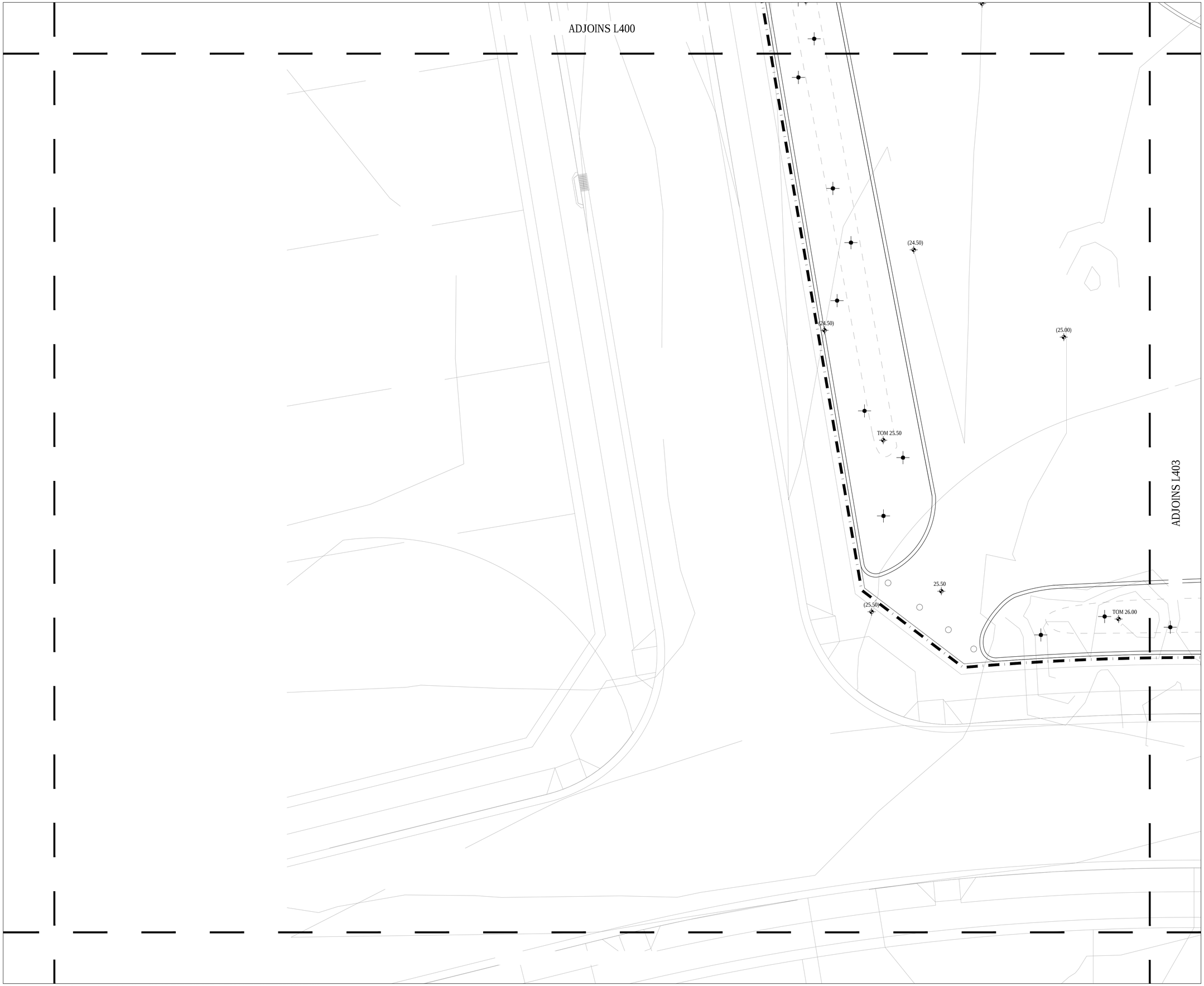
DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L401	B



CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

KEYPLAN

NOTE - TREE CANOPIES REMOVED FOR CLARITY

1m 0m 1m 2m 5m

SCALE: 1:100 @ A1 size sheet

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A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
LEVELS

REALM studios

city making + liveability

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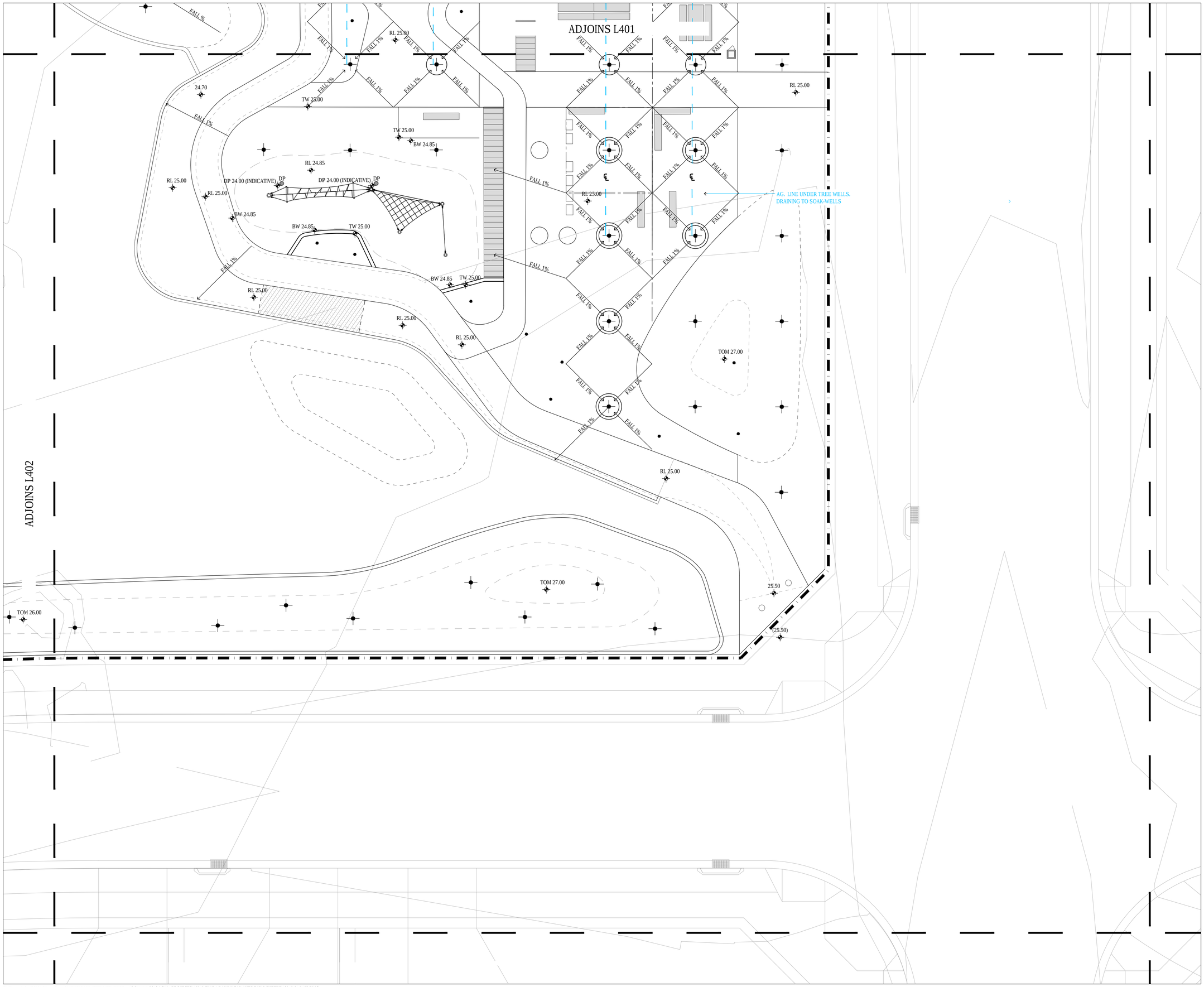
DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L402	B



CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

KEYPLAN

NOTE - TREE CANOPIES REMOVED FOR CLARITY

1m 0m 1m 2m 5m

SCALE: 1:100 @ A1 size sheet

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ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
LEVELS

REALM studios

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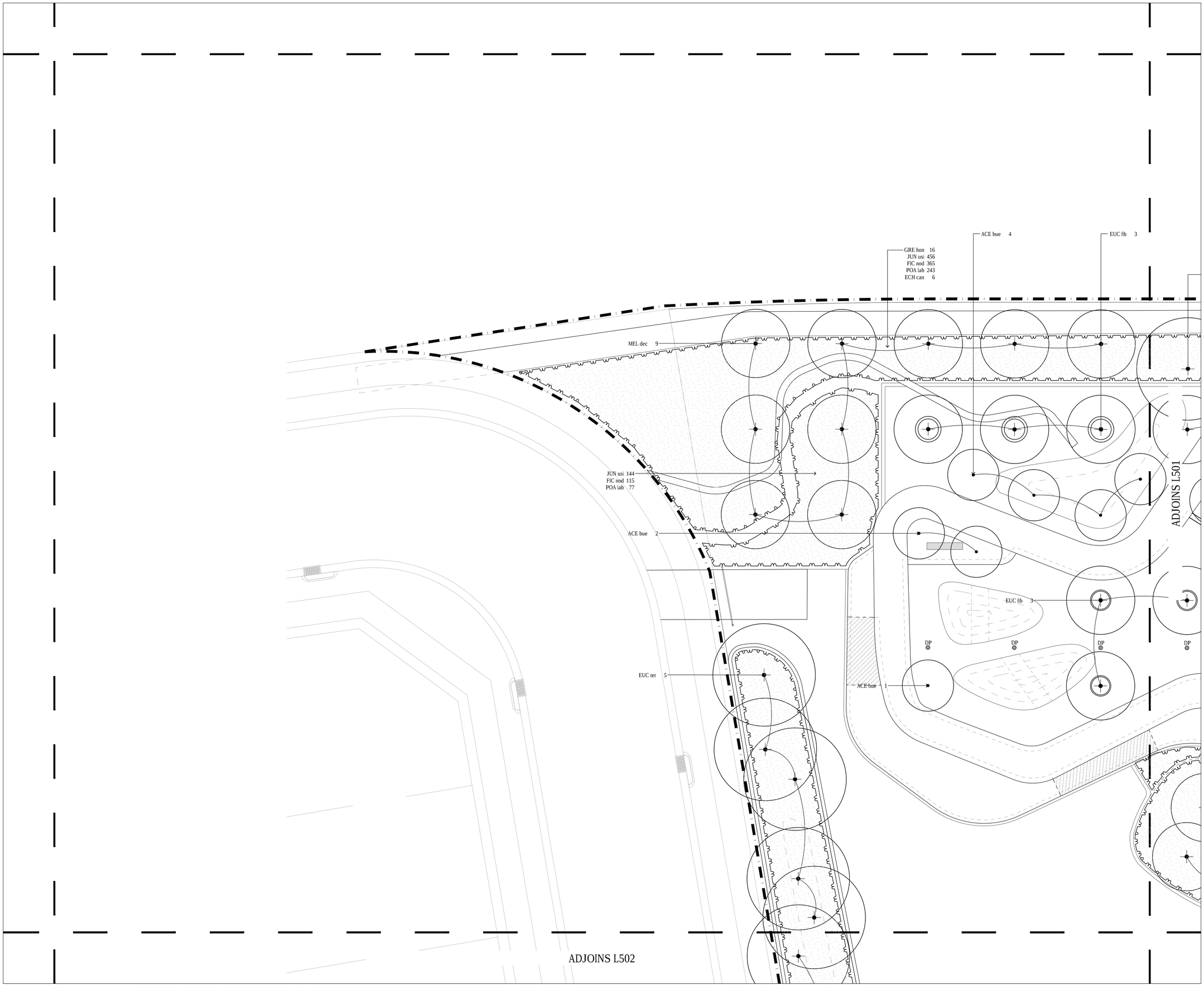
DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L403	B



CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

KEYPLAN

1m 0m 1m 2m 5m

SCALE: 1:100 @ A1 size sheet

GENERAL NOTES

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ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
PLANTING PLAN

REALM studios

city making + liveability

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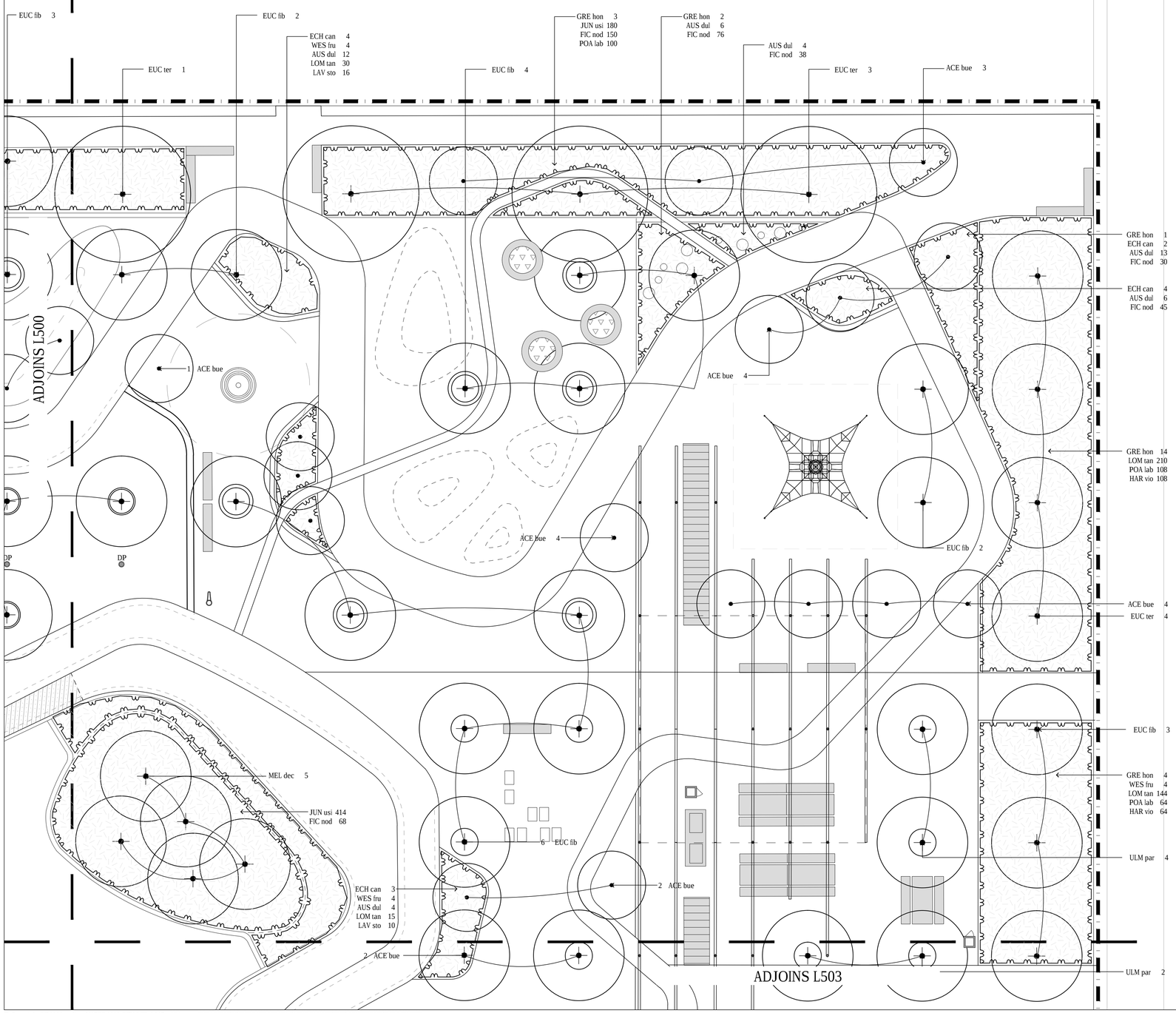
DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L500	B



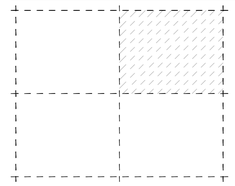
CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

KEYPLAN



1m 0m 1m 2m 5m

SCALE: 1:100 @ A1 size sheet

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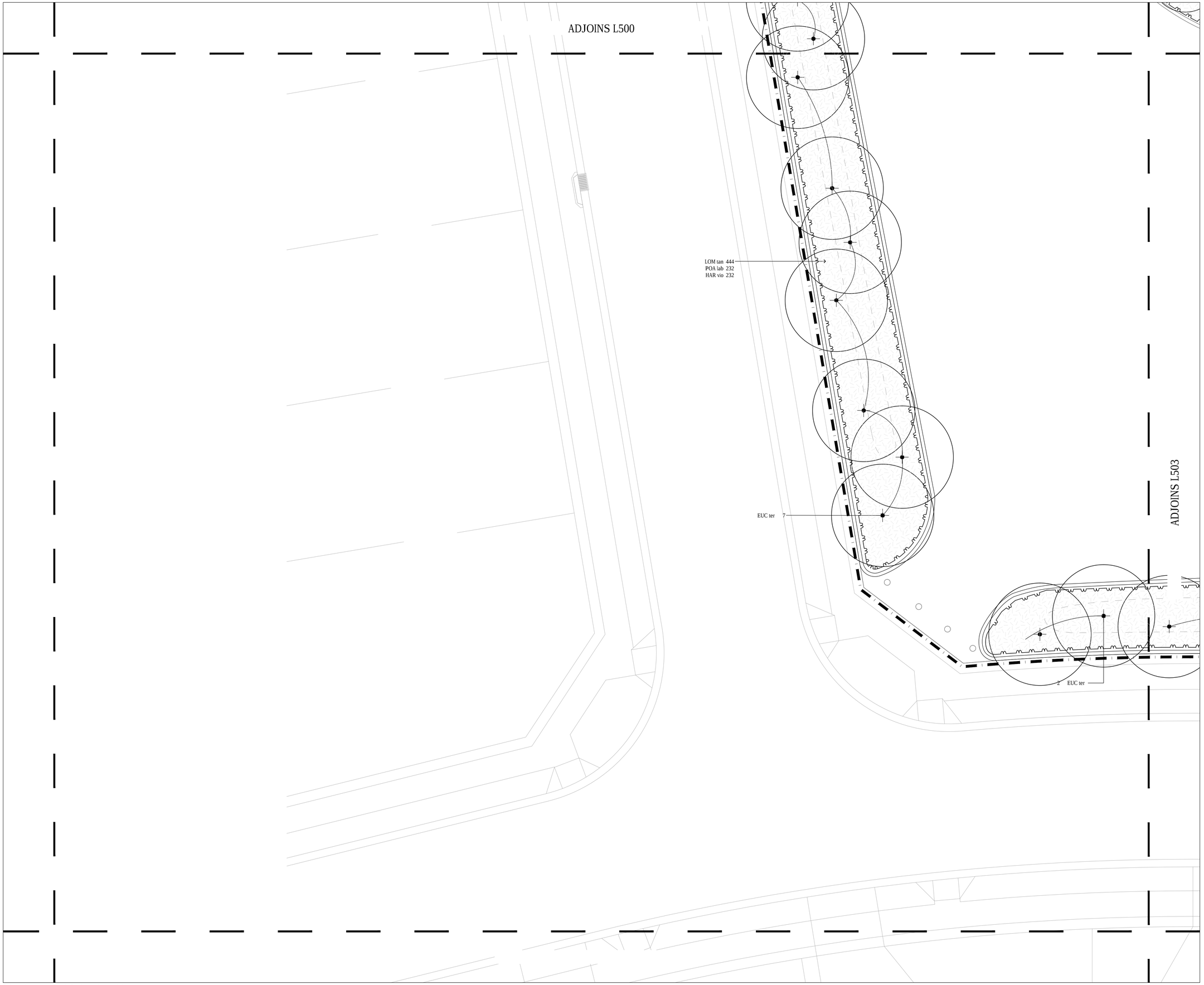
2018.11.xx	1:100 @ A1		
PROJECT No.	DRAWING NUMBER		REVISION
18218	L501		B



CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

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KEYPLAN

1m 0m 1m 2m 5m

SCALE: 1:100 @ A1 size sheet

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PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
PLANTING PLAN

REALM studios

city making + liveability

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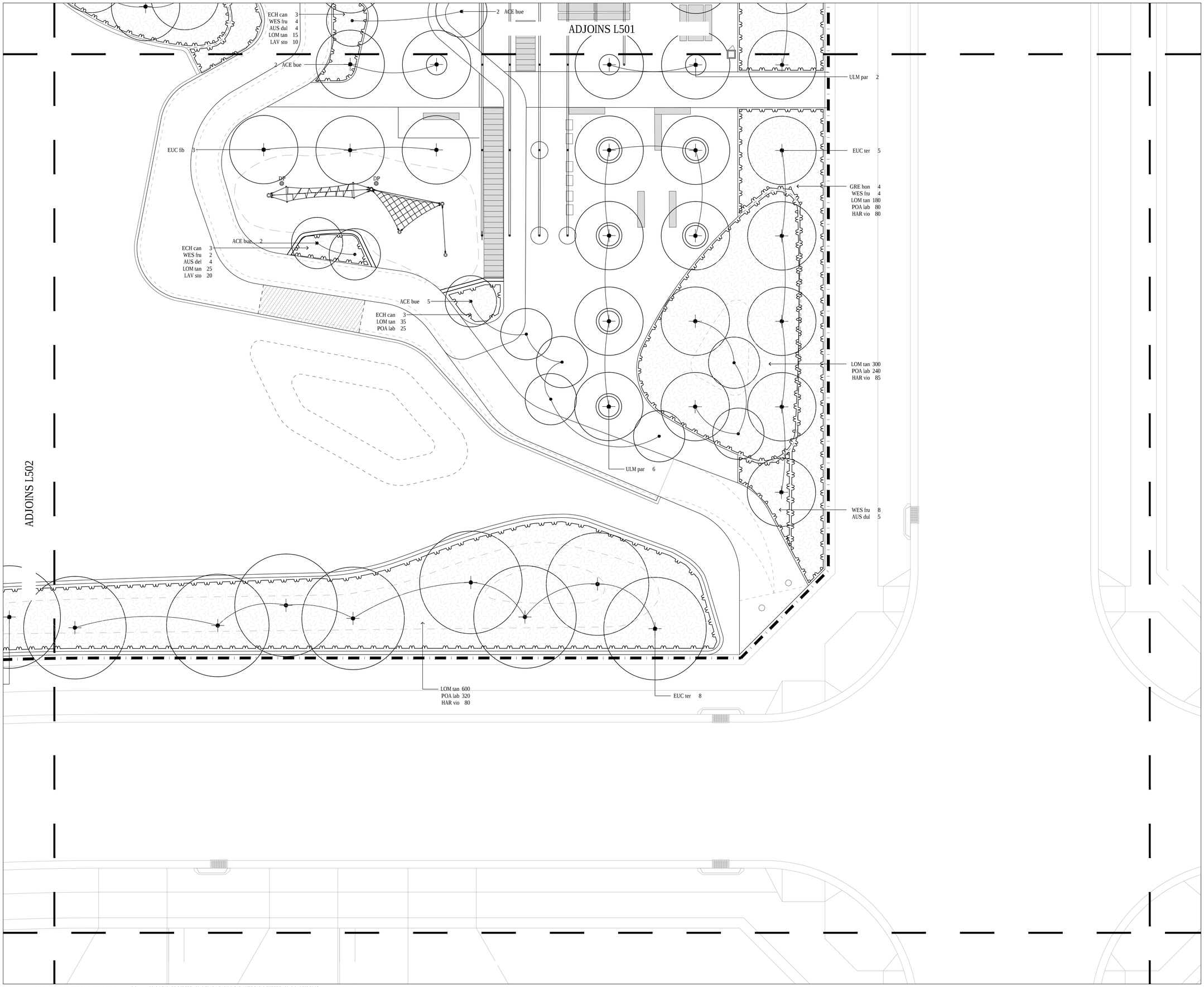
DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L502	B



CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

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KEYPLAN

1m 0m 1m 2m 5m

SCALE: 1:100 @ A1 size sheet

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PROJECT TITLE

ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
PLANTING PLAN

REALM studios

city making + liveability

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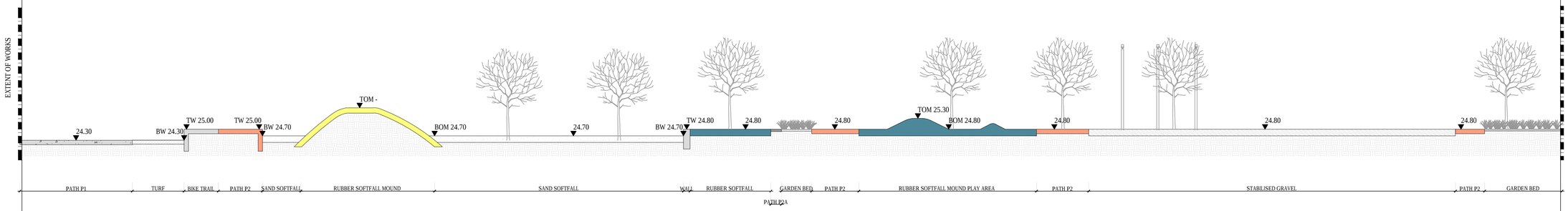
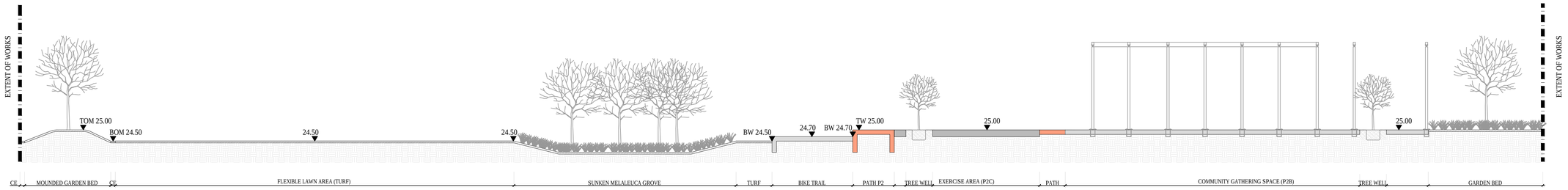
DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP

DATE	SCALE
2018.11.xx	1:100 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L503	B



1 SECTION AA - FULL SITE LOOKING NORTH
SCALE 1:100



2 SECTION BB - FULL SITE LOOKING NORTH
SCALE 1:100

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

1m 0m 1m 2m 5m
SCALE: 1:100 @ A1 size sheet

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A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

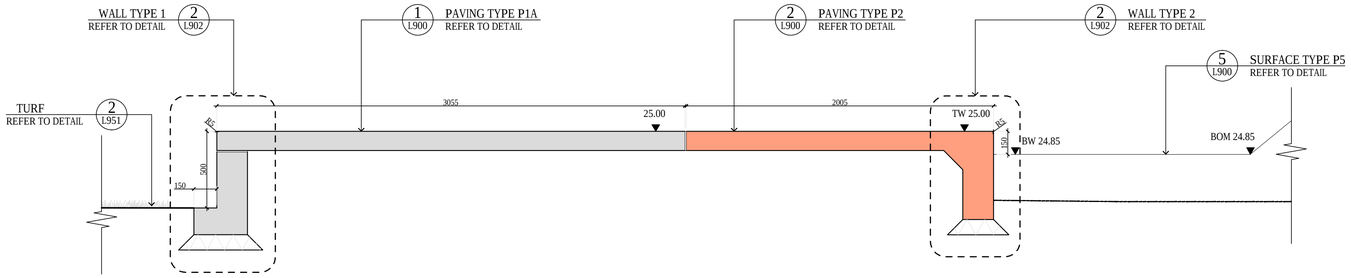
PROJECT TITLE
ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT
STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE
LANDSCAPE DRAWINGS
SITE SECTIONS

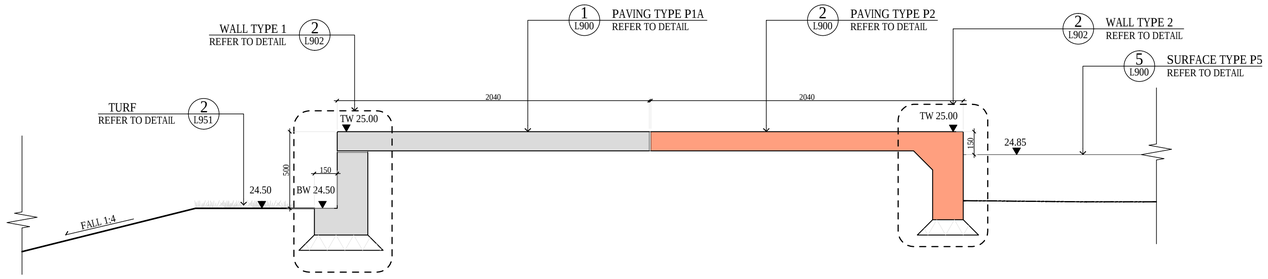
REALM studios
city making + liveability
www.realmstudios.com

DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP
DATE	SCALE		
2018.11.xx	1:100 @ A1		
PROJECT No.	DRAWING NUMBER		REVISION
18218	L700		B



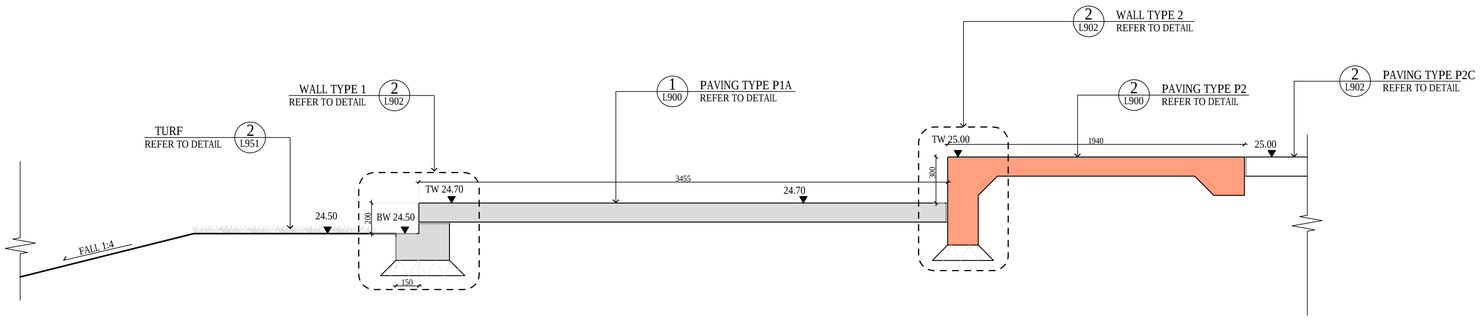
1 SECTION THROUGH W1, P1A, P2, P5

SCALE 1:20



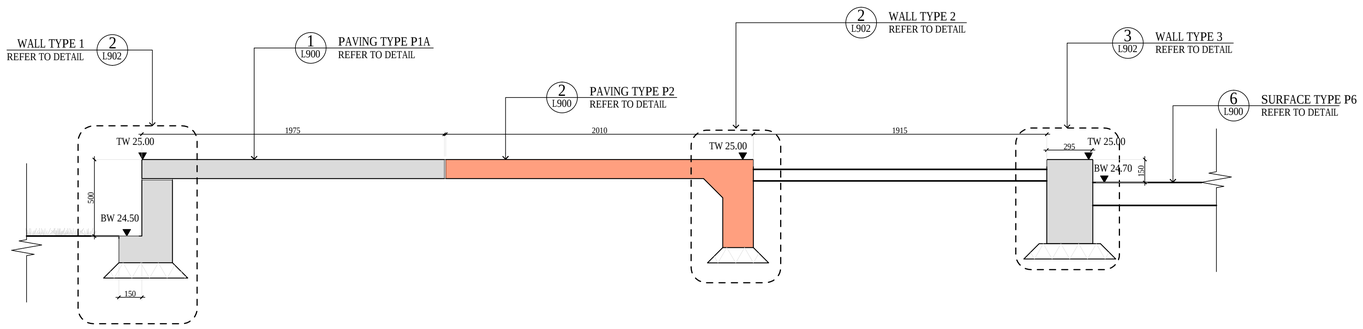
2 SECTION THROUGH W1, P1A, P2, P5

SCALE 1:20



3 SECTION THROUGH W1, P1A, P2, P2C

SCALE 1:20



4 SECTION THROUGH W1, W2, P1A, P2, P6

SCALE 1:20

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

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200mm 0m 200mm 400mm 1m

SCALE: 1:20 @ A1 size sheet

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MARSDEN PARK, NEW SOUTH WALES

CLIENT

STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE

LANDSCAPE DRAWINGS
SITE SECTIONS

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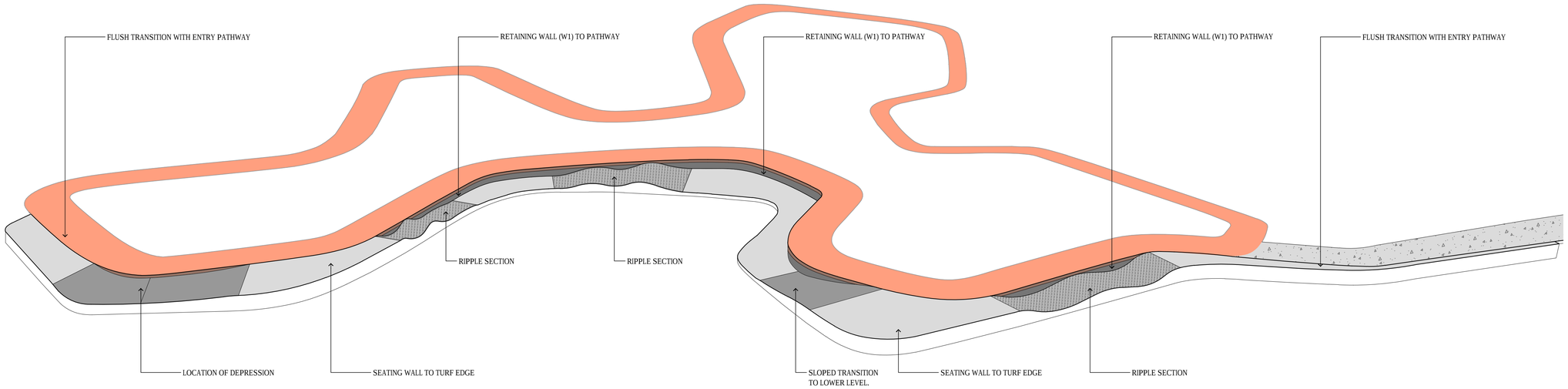
DATE	SCALE
2018.11.xx	1:20 @ A1

PROJECT No.	DRAWING NUMBER	REVISION
18218	L701	B



3D VIEW TO ILLUSTRATE DESIGN INTENT ONLY.

1 INSITU CONCRETE - TOPOGRAPHIC BIKE PATH
AXOMETRIC VIEW - NTS

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

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1m 0m 1m 2m 5m
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SYDNEY, NSW, 2000

DRAWING TITLE
LANDSCAPE DRAWINGS
SITE SECTIONS

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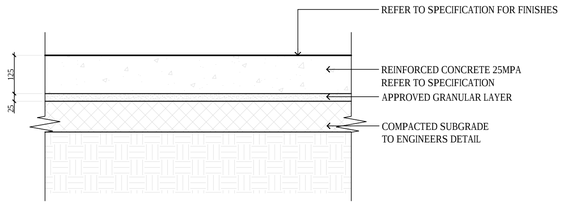
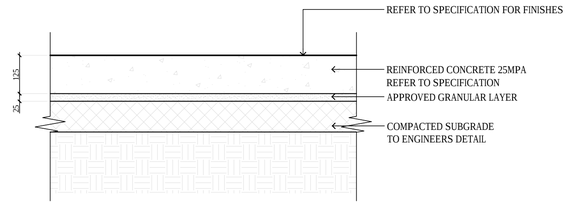
DATE	SCALE		
2018.12.21	1:50 @ A1		
PROJECT No.	DRAWING NUMBER		REVISION
18218	L702		A

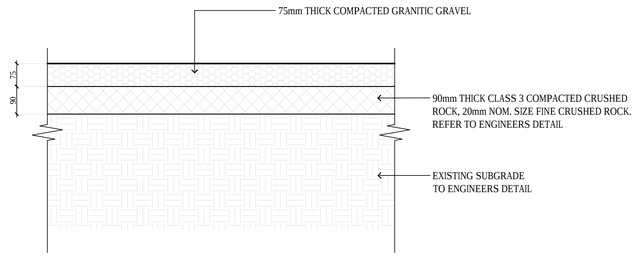


NOTE
P1 - 200MM THICK AT AREAS OF VEHICLE ACCESS. REFER TO SPECIFICATION

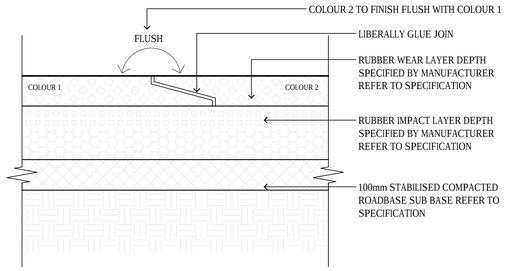
1 SURFACE TYPE P1, P1A: CONCRETE (PEDESTRIAN) - TYP. SECTION
SCALE 1:10



2 SURFACE TYPE P2 P2A: CONCRETE - TYP. SECTIONS
SCALE 1:10

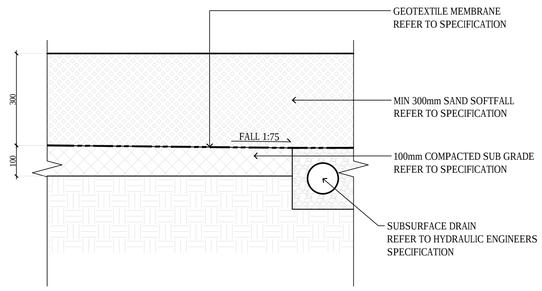


3 SURFACE TYPE P3: STABILISED GRAVEL
SCALE 1:10

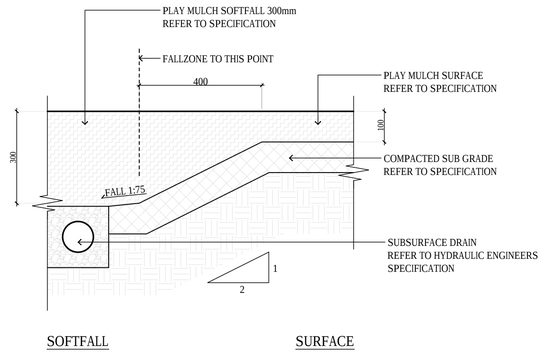


NOTES:
COLOUR VARIES. REFER TO SURFACE FINISHES PLANS FOR LOCATIONS.
RUBBER SOFTFALL TO BE INSTALLED TO MANUFACTURERS / PLAY CONSULTANTS SPECIFICATION
RUBBER SOFTFALL BASE LAYER (IF REQUIRED TO MEET FALL ATTENUATION REQUIREMENTS) REFER SPEC.

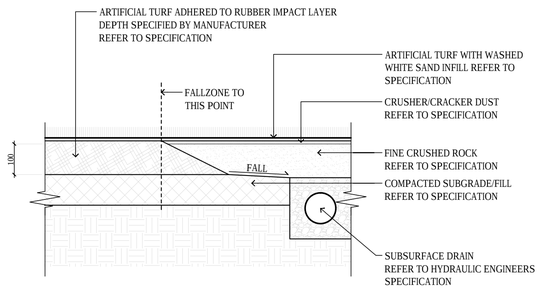
4 SURFACE TYPE P4 - P4E: RUBBER SOFTFALL
SCALE 1:10



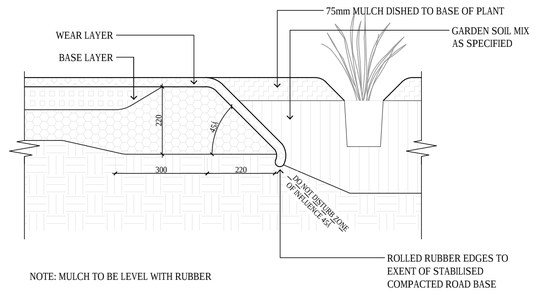
5 SURFACE TYPE P5: SAND SOFTFALL & SURFACE
SCALE 1:10



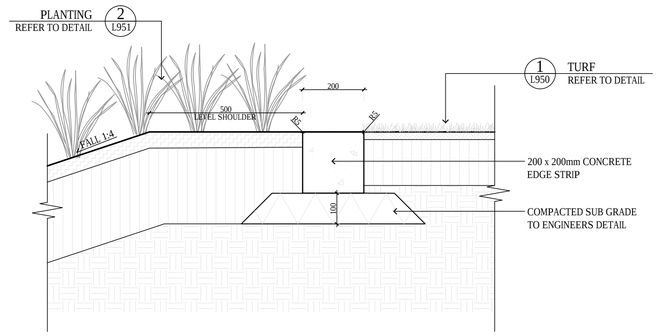
6 SURFACE TYPE P6: BARK SOFTFALL & SURFACE
SCALE 1:10



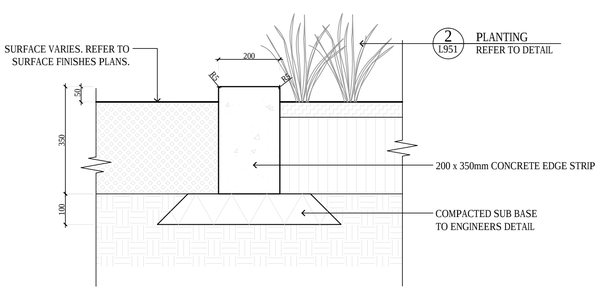
7 SURFACE TYPE P7: ARTIFICIAL TURF
SCALE 1:10



8 SURFACE TYPE P4 - P4E: RUBBER SOFTFALL TURN DOWN EDGE
SCALE 1:10



9 EDGE TYPE CE1: 200mm WIDE CONCRETE EDGE - TURF | PLANTING AREAS
SCALE 1:10



10 EDGE TYPE CE2: 150mm WIDE CONCRETE EDGE
SCALE 1:10

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

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100mm 0m 100mm 200mm 500mm
SCALE: 1:10 @ A1 size sheet

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40% CD

PROJECT TITLE
ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT
STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE
LANDSCAPE DRAWINGS
DETAILS

REALM studios
city making + liveability
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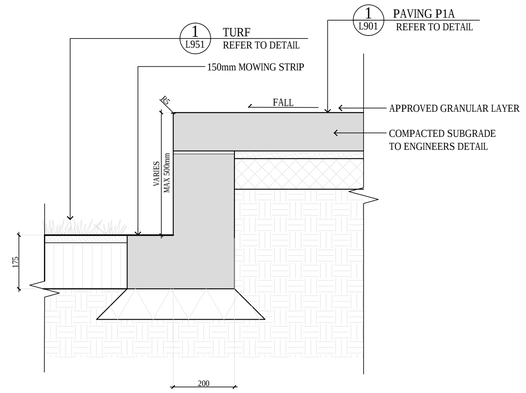
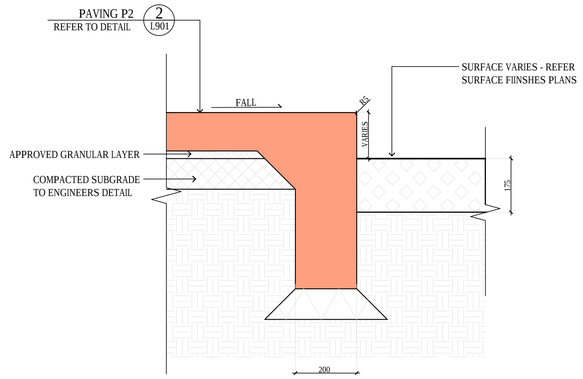
DATE	SCALE		
2018.11.xx	1:10 @ A1		
PROJECT No.	DRAWING NUMBER		REVISION
18218	L900		B



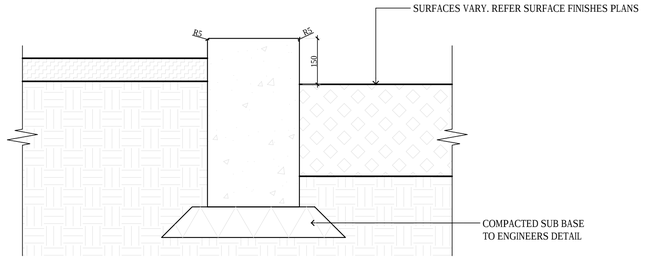
NOTE
FOR STRUCTURAL DESIGN OF WALLS, REFER TO STRUCTURAL ENGINEERS DETAILS.
FOR FINISHED LEVELS REFER TO LEVELS AND SETOUT PLAN.

1 W1 - WALL TYPE 1 TO MATCH P1A
SCALE 1:10



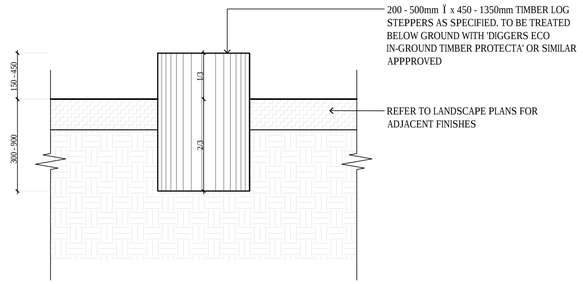
NOTE
FOR STRUCTURAL DESIGN OF WALLS, REFER TO STRUCTURAL ENGINEERS DETAILS.
FOR FINISHED LEVELS REFER TO LEVELS AND SETOUT PLAN.

2 W2 - WALL TYPE 2 TO MATCH P2
SCALE 1:10



NOTE
FOR STRUCTURAL DESIGN OF WALLS, REFER TO STRUCTURAL ENGINEERS DETAILS.
FOR FINISHED LEVELS REFER TO LEVELS AND SETOUT PLAN.

3 W3 - WALL TYPE 3: CONCRETE UPSTAND
SCALE 1:10



4 LOG STEPPERS: BARK TO PLAYGROUND - TYP. SECTION
SCALE 1:10

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

100mm 0m 100mm 200mm 500mm
SCALE: 1:10 @ A1 size sheet

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DO NOT SCALE FROM THE DRAWING

ISSUE	DATE	AMENDMENTS	APP
A	30.11.18	100% DESIGN DEVELOPMENT	DP
B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

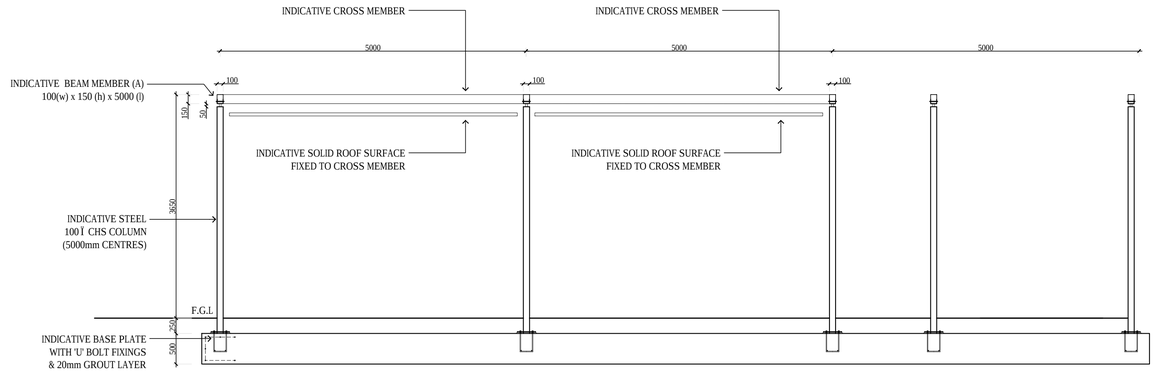
PROJECT TITLE
ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT
STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE
LANDSCAPE DRAWINGS
DETAILS

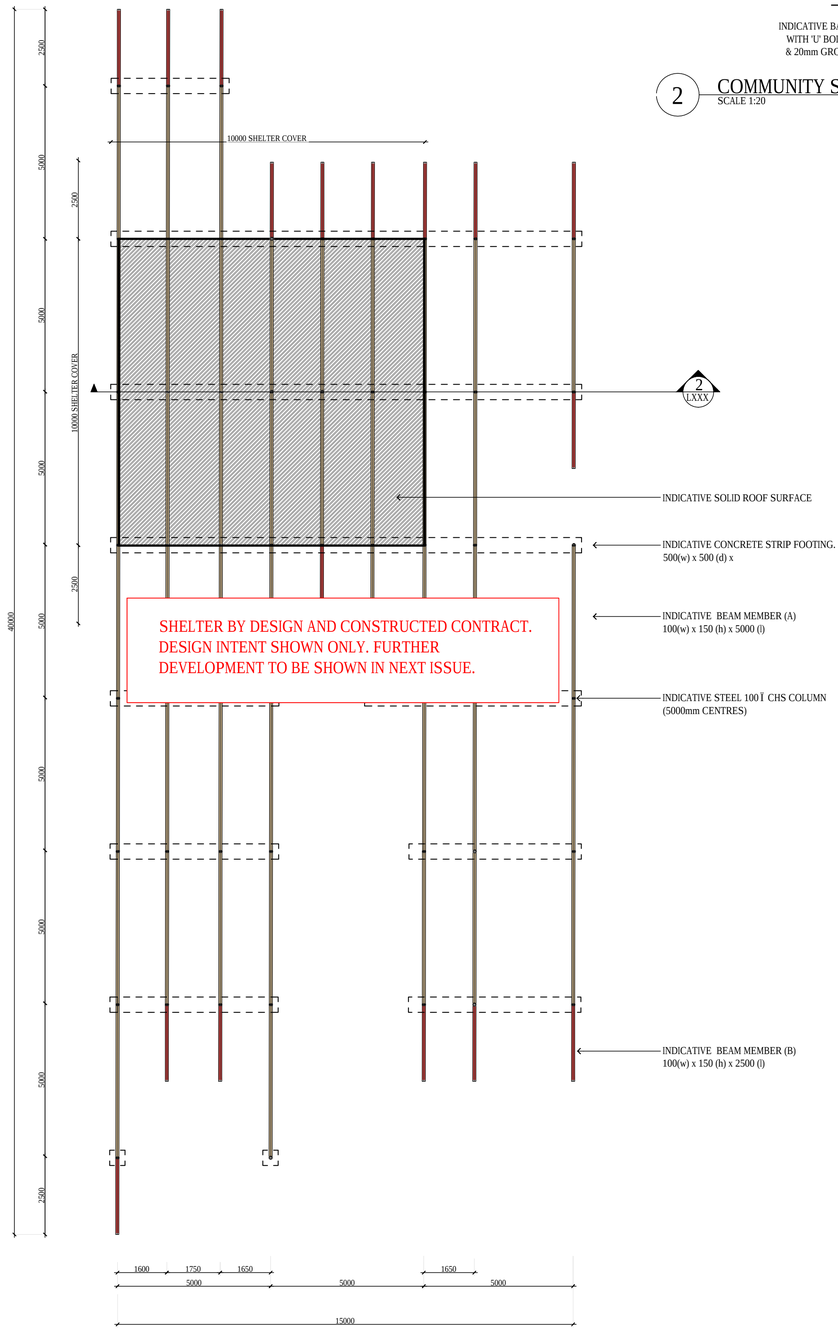
REALM studios
city making + liveability
www.realmstudios.com

DESIGNED	DRAWN	CHECKED	APPROVED
#	RG	BS	TO / DP
DATE	SCALE		
2018.11.xx	VARIES		
PROJECT No.	DRAWING NUMBER		REVISION
18218	L901		B



2 COMMUNITY SHELTER TYP. SECTION
SCALE 1:20

SHELTER BY DESIGN AND CONSTRUCTED CONTRACT.
DESIGN INTENT SHOWN ONLY. FURTHER
DEVELOPMENT TO BE SHOWN IN NEXT ISSUE.



SHELTER BY DESIGN AND CONSTRUCTED CONTRACT.
DESIGN INTENT SHOWN ONLY. FURTHER
DEVELOPMENT TO BE SHOWN IN NEXT ISSUE.

1 COMMUNITY SHELTER PLAN
SCALE 1:100

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

1m 0m 1m 2m 5m
SCALE: 1:100 @ A1 size sheet

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B	21.12.18	40% CONSTRUCTION DOCUMENTATION	DP

40% CD

PROJECT TITLE
ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT
STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE
LANDSCAPE DRAWINGS
DETAILS

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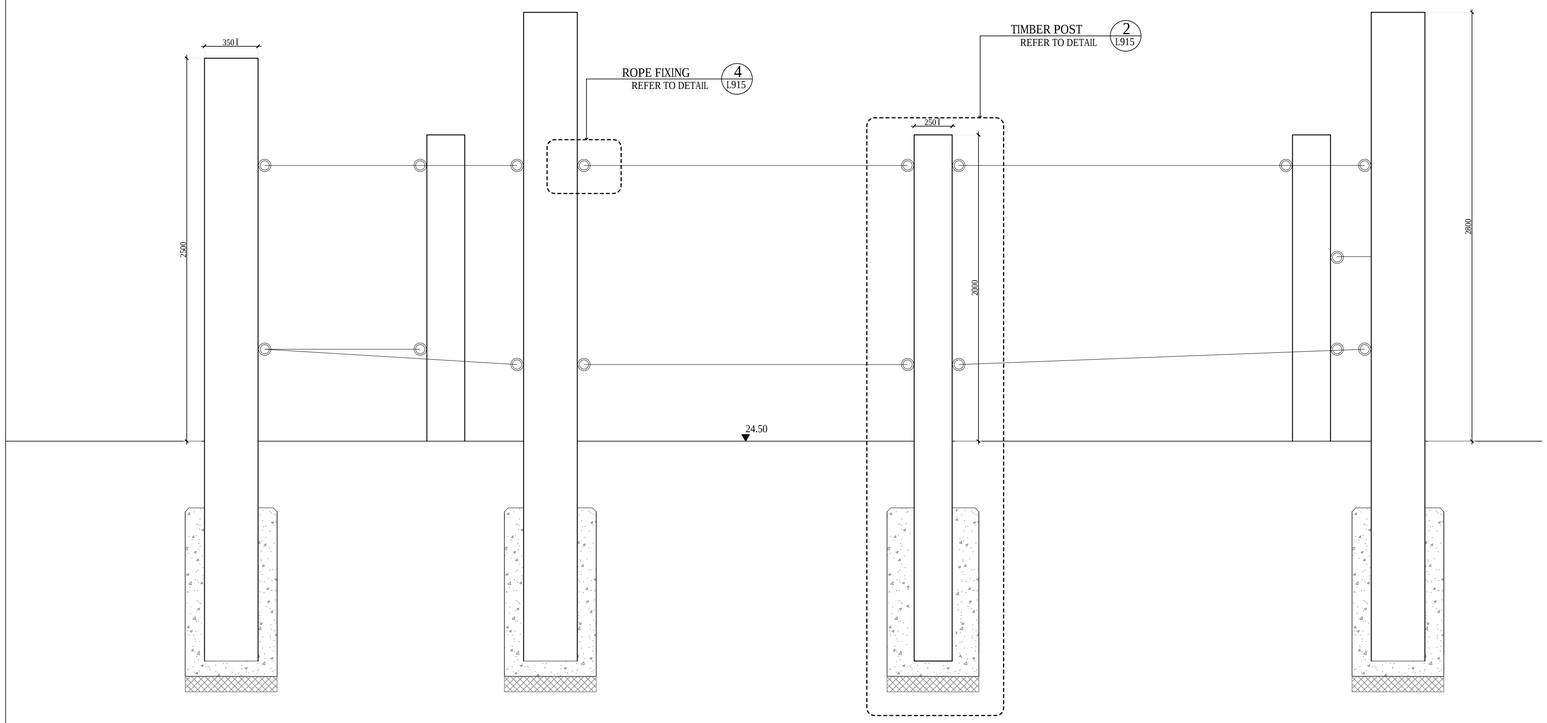
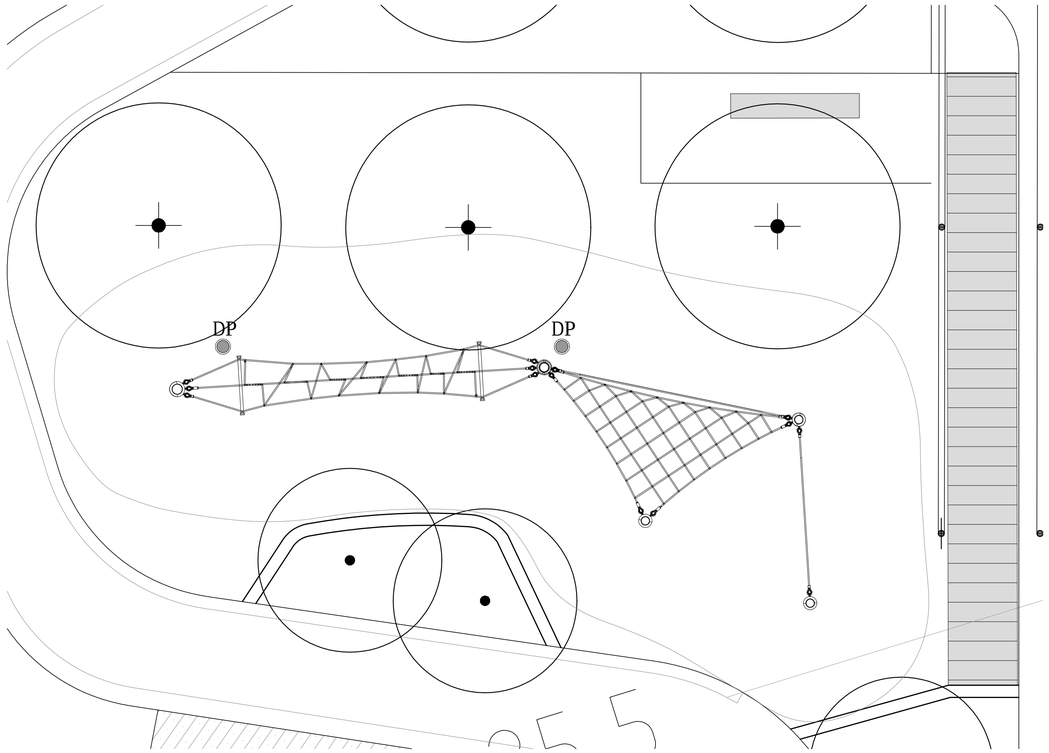
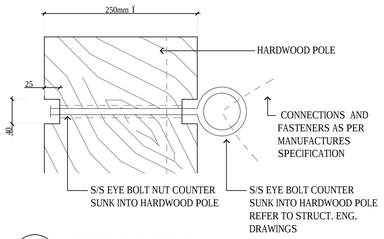
#	RG	BS	TO / DP
DATE 2018.11.xx	SCALE VARIES		
PROJECT No. 18218	DRAWING NUMBER L910		REVISION B



1 INDICATIVE ROPES COURSE - SECTION
SCALE 1:20



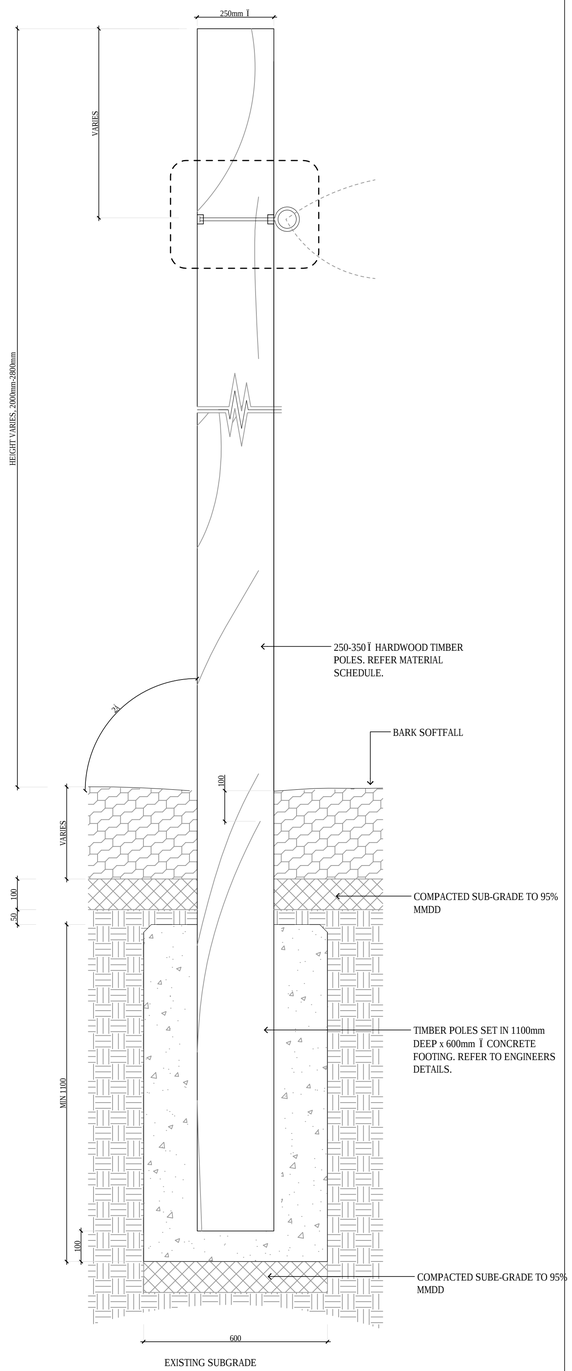
3 INDICATIVE ROPES COURSE - PLAN
SCALE 1:50



4 FIXING DETAIL
SECTION SCALE 1:5

NOTE:
SET-OUT OF POLES TO BE APPROVED ON SITE BY SUPERINTENDENT PRIOR TO INSTALLATION.

POLE FACES TO BE SANDED SMOOTH AND FREE OF ANY SPLINTERED WOOD.



2 F5 VERTICAL TIMBER POSTS
SECTION SCALE 1:10

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

REFER TO LEGENDS AND NOTES SHEET FOR PROJECT SPECIFIC NOTES AND LEGENDS.

500mm 0m 500mm 1m 2.5m
SCALE: 1:50 @ A1 size sheet

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40% CD

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CLIENT
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133 CASTLEREAGH ST
SYDNEY, NSW, 2000

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LANDSCAPE DRAWINGS
DETAILS

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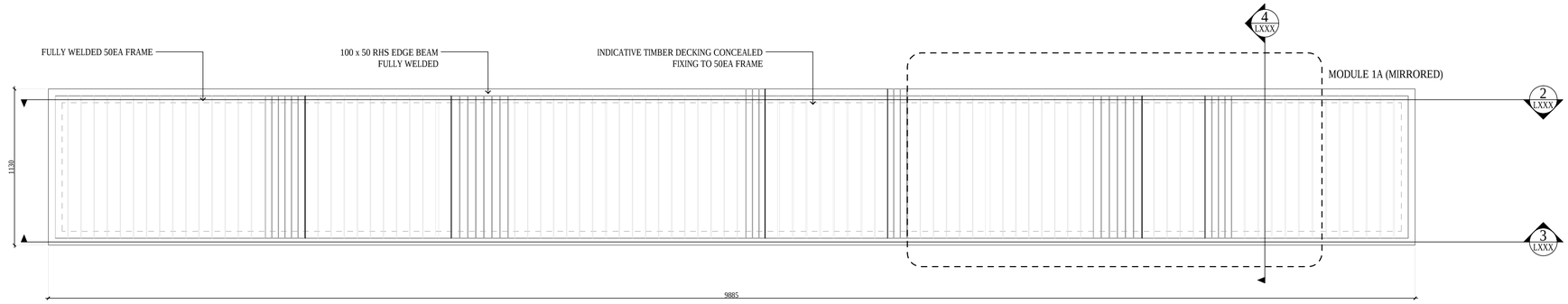
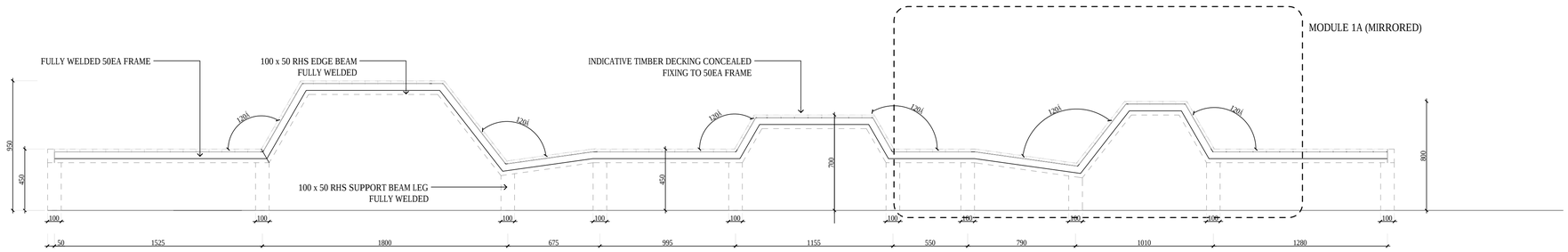
PROJECT No.	DRAWING NUMBER		REVISION
18218	L915		B

10 January 2019 | S:\04 PROJECTS\18218 ELARA PARK 2\CAD\AUTOCAD\6 SHEETS\18218-01-L915.DWG

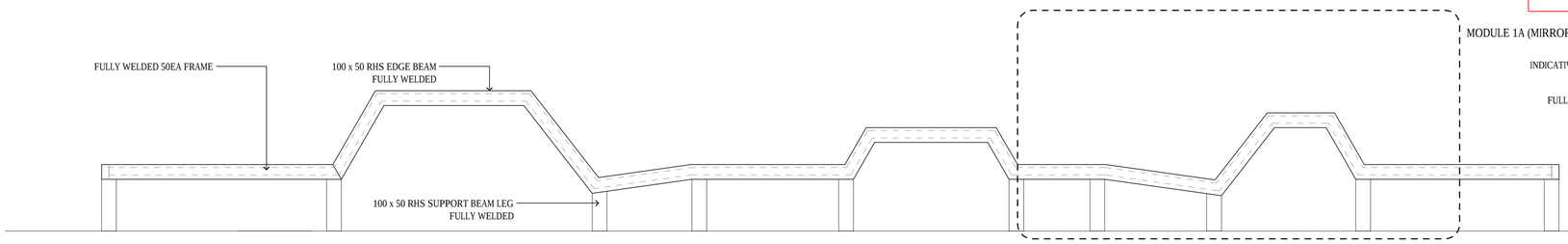


1 PLAN WITH DECKING
SCALE 1:20

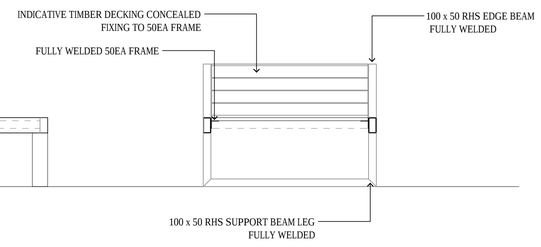


2 SECTION - DECKING / EA FRAME
SCALE 1:20

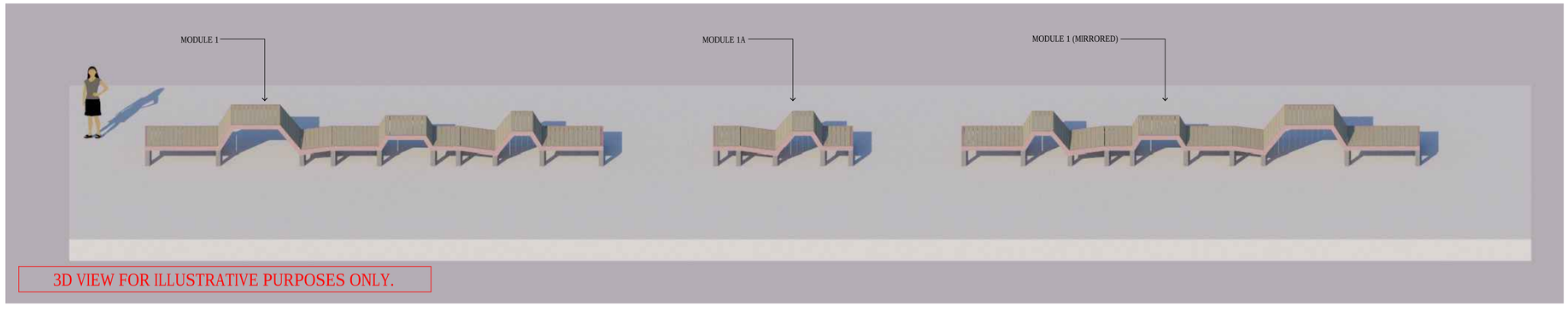
FURNITURE ELEMENTS BY DESIGN AND CONSTRUCTED CONTRACT.
DESIGN INTENT SHOWN ONLY. FURTHER DEVELOPMENT TO BE SHOWN IN NEXT ISSUE.



3 SECTION - BEAM PROFILE
SCALE 1:20



4 SECTION TYP.
SCALE 1:20



5 TOPOGRAPHY SEAT - INDICATIVE MODEL
SCALE 1:20

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

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200mm 0m 200mm 400mm 1m
SCALE: 1:20 @ A1 size sheet

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ELARA PARK 2
MARSDEN PARK, NEW SOUTH WALES

CLIENT
STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE
LANDSCAPE DRAWINGS
DETAILS

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city making + liveability
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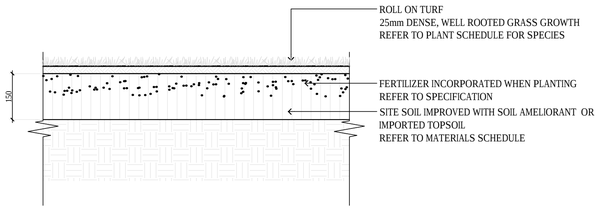
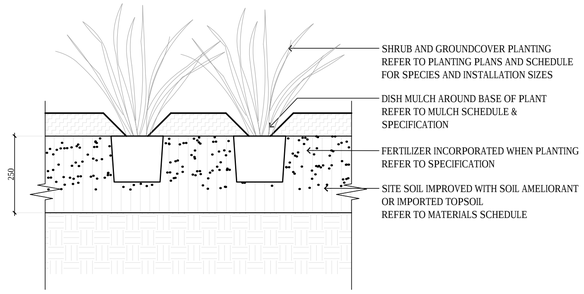
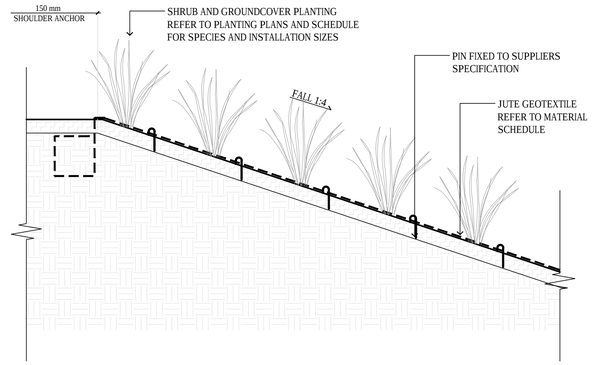
2018.11.xx	VARIES		
PROJECT No.	DRAWING NUMBER		REVISION
18218	L920		B



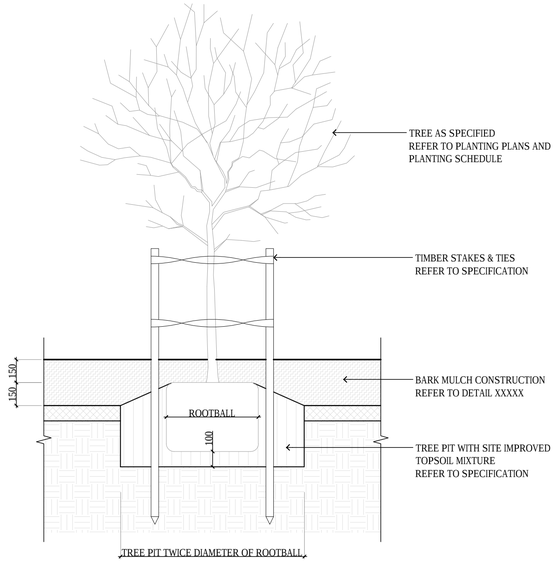
1 TURF TYPE G1: GENERAL ROLL ON - TYPICAL SECTION
SCALE 1:10



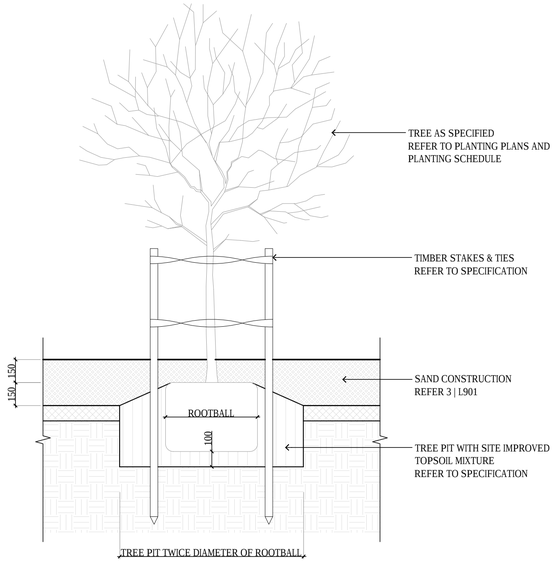
2 PLANTING: 150mm POTS - TYP. SECTION
SCALE 1:10



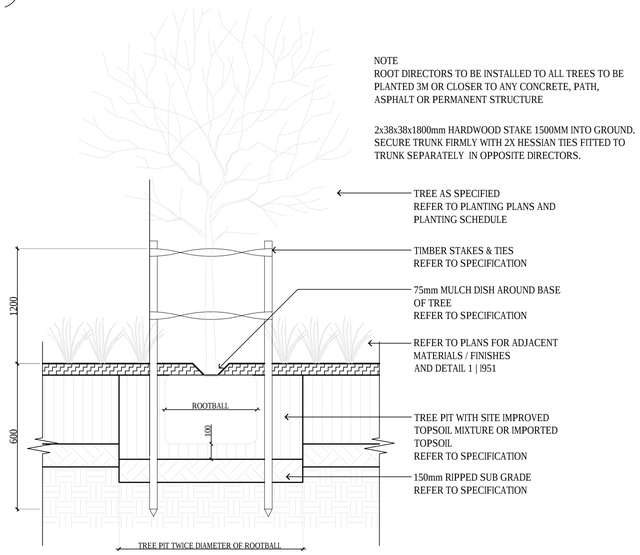
3 ON GRADE SLOPE PLANTING - 150mm POTS
SCALE 1:10



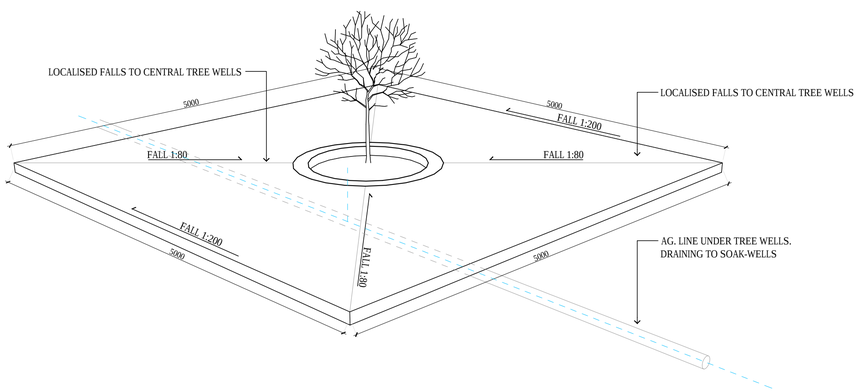
4 TYPICAL TREE IN BARK MULCH SOFTFALL
SCALE 1:20



5 TYPICAL TREE IN SAND SOFTFALL
SCALE 1:20



6 TYPICAL TREE IN PLANTING
SCALE 1:20



7 INDICATIVE TREE DRAINAGE STRATEGY
SCALE 1:50

CONSULTANT	DRAWING ID	ISSUE	DATE

LEGEND

DRAWING NOTES

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200mm 0m 200mm 400mm 1m
SCALE: 1:20 @ A1 size sheet

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40% CD

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MARSDEN PARK, NEW SOUTH WALES

CLIENT
STOCKLAND
133 CASTLEREAGH ST
SYDNEY, NSW, 2000

DRAWING TITLE
LANDSCAPE DRAWINGS
PLANTING DETAILS

REALM studios
city making + liveability
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2018.11.xx	VARIES		
PROJECT No.	DRAWING NUMBER		REVISION
18218	L950		B

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Schedule 8

Not used

Plan on the following page

Schedule 9

Staged DAs

Precinct	Stage	Number of Final Lots	Cumulative Final Lots	Superlots	Residual Lots	Development Application Reference
Precinct 1	1 – 4 and 11	240	240	7	4	13-2051
Precinct 1	5 – 10	237	477	-	-	13-2519
Precinct 1	MD4	52	529	-	-	DA15 – 00746
Precinct 1	MD1 – 3	173	702	-	-	15-2269, 15-2268 and 15-2270
Precinct 1	12 and 12A	69	771	3	2	14-1498
Precinct 1	12B	14	785	-	1	16-4697
Precinct 1	13 and 14	105	890	-	-	14-2557
Precinct 2	15 – 23	635	1525	2	4	JRPP15-1997
Precinct 4	24~~, 24A~~, 25 and 26	275	1800	3	11	15-02897
Precinct 5a	39 and 40	255	~~2055~~2,055	-	1	JRPP15-2324
Precinct 3	27 – 32 including Stage 30A	3~~4~~82	2,4~~0~~37	10	2	DA-16-05045
Precinct 3a	33 and 34	14~~1~~6	2,~~549~~553	7	7	DA-17-00404

Precinct	Stage	Number of Final Lots	Cumulative Final Lots	Superlots	Residual Lots	Development Application Reference
Precinct 3a	33A	13	2,566	-	-	DA-20-00465
Precinct 5b	41, 42, 43 and 44	40~~3~~2	~~2952~~2,968	-	-	JRPP15-2324
Precinct 6	45-53, MD7~~,~~ ~~MD8~~ and MD9	~~945~~873	3,~~897~~841	-	-	SPP-17-00044, DA-18-00017, ~~SPP-18-00002~~, DA-18-00019
Precinct 3	MD5 Stage 1, MD5 Stage 2, MD6	135	~~4,032~~3,976	-	-	DA-18-00020, SPP-18-00001, DA-18-00018, MOD-19-00071
Precinct 1	37	49	4,~~081~~025	-	-	DA-17-01941
Precinct 5b	42a	20	4,045	0	0	DA-20-01870
Precinct 5b	42a	7	4,052	0	0	DA-20-02093
Precinct 5b	44A	80	4,~~161~~132	-	-	DA-17-02362
Precinct 6	51A	42	4,174	0	0	DA-20-02086
Precinct 1	36	51	4,225~~4,211~~	-	-	~~Development Application~~ DA-18-02461 ~~lodged, but not yet approved as at the date of this Deed~~
Precinct 3	27A	2	4,227	-	-	DA19-0548
Precinct 7	7	188	4,415	11	4	DA-21-02068

Precinct	Stage	Number of Final Lots	Cumulative Final Lots	Superlots	Residual Lots	Development Application Reference
Precinct 4	24A West	8	4,423	-	-	DA-20-01973
Precinct 5b	41A	9	4,432	-	-	DA-21-02006

The parties acknowledge that Development Applications for some of the stages specified in the above schedule has not yet been determined and the number of Final Lots for each of those stages will be subject to Development Consent.

Schedule 10

Assignment Deed

Deed of Assignment

Assignment of Surplus Credits under Elara, Marsden Park Planning Agreement

draft

Blacktown City Council

and

[Developer]

and

[Assignee]

Date:

Deed of Assignment of Surplus Credits under Elara, Marsden Park Planning Agreement

Table of Contents

Summary Sheet ..... Error! Bookmark not defined.

Parties **4**

Background **4**

Operative provisions **4**

Part 1 - Preliminary 4

1 Interpretation 4

2 Commencement ..... **Error! Bookmark not defined.**

3 Warranties 5

4 Assignment 5

5 GST 6

6 Stamp duty 6

7 Costs 7

Execution **7**

draft

Deed of Assignment of Surplus Credits under Elara, Marsden Park Planning Agreement

Parties' contact details and address for notices

Council:

Name: Blacktown City Council

Address: 62 Flushcombe Rd, Blacktown NSW 2148

Telephone: (02) 9839 6461

Facsimile: (02) 9831 1961

Email: council@blacktown.nsw.gov.au

Representative: Dennis Bagnall

Assignor:

Name: [*insert*]

Address: [*insert*]

Telephone: [*insert*]

Facsimile: [*insert*]

Email: [*insert*]

Representative: [*insert*]

Assignee:

Name: [*insert*]

Address: [*insert*]

Telephone: [*insert*]

Facsimile: [*insert*]

Email: [*insert*]

Representative: [*insert*]

draft

Deed of Assignment of Surplus Credits under Elara, Marsden Park Planning Agreement

Parties

Blacktown City Council ABN 18 153 831 768 of 62 Flushcombe Rd, Blacktown NSW 2148 (Council)

and

Stockland Development Pty Limited ABN 71 000 064 835 of Level 25, 133 Castlereagh Street, Sydney NSW 2000 (Assignor)

and

[Assignee] [Assignee's ABN], of [Assignee's address] (Assignee)

draft

Background

A Council and the Assignor are parties to the Planning Agreement.

B Under clause 9 of the Planning Agreement, the Assignor is entitled to accrue and assign Surplus Credits to its nominee.

C The Assignor and the Assignee have agreed that the benefits of the Assigned Surplus Credits will be assigned from the Assignor to the Assignee on the terms of this Deed.

D Council consents to the assignment of the Surplus Credits in accordance with this Deed.

E The parties enter into this Deed in satisfaction of the requirements of section 12 of the *Conveyancing Act 1919* (NSW).

Operative provisions

Part 1 - Preliminary

1 Interpretation

1.1 In this Deed the following definitions apply:

Act means the *Environmental Planning and Assessment Act 1979* (NSW).

Assignment Date means the date of this Deed.

Assigned Surplus Credits means such of the Surplus Credits in the amount of [Insert amount]

Deed means this Deed and includes any schedules, annexures and appendices to this Deed.

Party means a party to this Deed.

Planning Agreement means the Elara Marsden Park Planning Agreement pursuant to s93F of the Act entered into between the Parties on 22 December 2014 and as varied from time to time.

Surplus Credits means the Surplus Credits as defined in the Planning Agreement accrued to the Assignor under the Planning Agreement.

1.2 Except as provided by clause 1.1, all capitalised words used in this Deed that are defined in clause 1.1 of the Planning Agreement have the same meaning as in the Planning Agreement.

2 Warranties

2.1 The Parties warrant to each other that:

2.1.1 they each have full capacity to enter into this Deed;

2.1.2 they are able to fully comply with their obligations, if any, under this Deed; and

2.1.3 their entry into this Deed does not contravene:

(a) any law or directive from a government entity;

(b) their constituent documents;

(c) any agreement or instrument to which it is a party; or

(d) any obligation of it to any other person.

2.2 The Assignor warrants to the Assignee that the Assigned Surplus Credits are not at the Assignment Date encumbered by any charge, mortgage, debt or the like.

3 Assignment

3.1 With effect on and from the Assignment Date, the Assignor absolutely and irrevocably assigns to the Assignee the Assigned Surplus Credits for consideration in the amount of $[insert].

3.2 The Assignee accepts the assignment of the Assigned Surplus Credits on the terms of this Deed.

draft

4 Council Consent

4.1 The Council confirms the amount of the Assigned Surplus Credits specified in clause 1.1 and consents to the assignment documented in this Deed.

5 GST

5.1 In this clause 5:

Adjustment Note, **Consideration**, **GST**, **GST Group**, **Margin Scheme**, **Money**, **Supply** and **Tax Invoice** have the meaning given by the GST Law.

GST Amount means in relation to a Taxable Supply the amount of GST payable in respect of the Taxable Supply.

GST Law has the meaning given by the *A New Tax System (Goods and Services Tax) Act 1999* (Cth).

Input Tax Credit has the meaning given by the GST Law and a reference to an Input Tax Credit entitlement of a party includes an Input Tax Credit for an acquisition made by that party but to which another member of the same GST Group is entitled under the GST Law.

Taxable Supply has the meaning given by the GST Law excluding (except where expressly agreed otherwise) a supply in respect of which the supplier chooses to apply the Margin Scheme in working out the amount of GST on that supply.

5.2 Subject to clause 4.4, if GST is payable on a Taxable Supply made under, by reference to or in connection with this Deed, the Party providing the Consideration for that Taxable Supply must also pay the GST Amount as additional Consideration.

5.3 Clause 4.2 does not apply to the extent that the Consideration for the Taxable Supply is expressly stated in this Deed to be GST inclusive.

5.4 No payment of any amount pursuant to this clause 4, and no payment of the GST Amount where the Consideration for the Taxable Supply is expressly agreed to be GST inclusive, is required until the supplier has provided a Tax Invoice or Adjustment Note as the case may be to the recipient.

5.5 Any reference in the calculation of Consideration or of any indemnity, reimbursement or similar amount to a cost, expense or other liability incurred by a party, must exclude the amount of any Input Tax Credit entitlement of that party in relation to the relevant cost, expense or other liability.

5.6 This clause continues to apply after expiration or termination of this Deed.

6 Stamp duty

6.1 The Assignee, as between the Parties, is liable to pay, and indemnifies the other Parties for, all stamp duty, duty, or like duties or imposts (**Duty**) (including any fine, interest or penalty) payable or assessed on or in connection with this Deed or the assignment of the Surplus Credits.

draft

6.2 If a party other than the Assignee pays any Duty referred to in clause 5.1 (including any fine, interest or penalty), in whole or in part, the Assignee must reimburse the paying party without set-off or deduction immediately on demand.

7 Costs

7.1 The Assignee is to pay to the Council the Council's reasonable costs of preparing, negotiating, executing and stamping this Deed, and any document related to this Deed within 7 days of a written demand by the Council for such payment.

8 Trustee Limitation of Liability

[Insert any necessary clause required by the assignee]

draft

Execution

Executed as a Deed

Dated:

Executed on behalf of Council

_____	_____
General Manager	**Witness**
_____	----------
Mayor	**Witness**

draft

Executed on behalf of [insert] [insert execution block]

_____

Name

_____

Witness

Executed on behalf of [insert] [insert execution block]

_____

Name

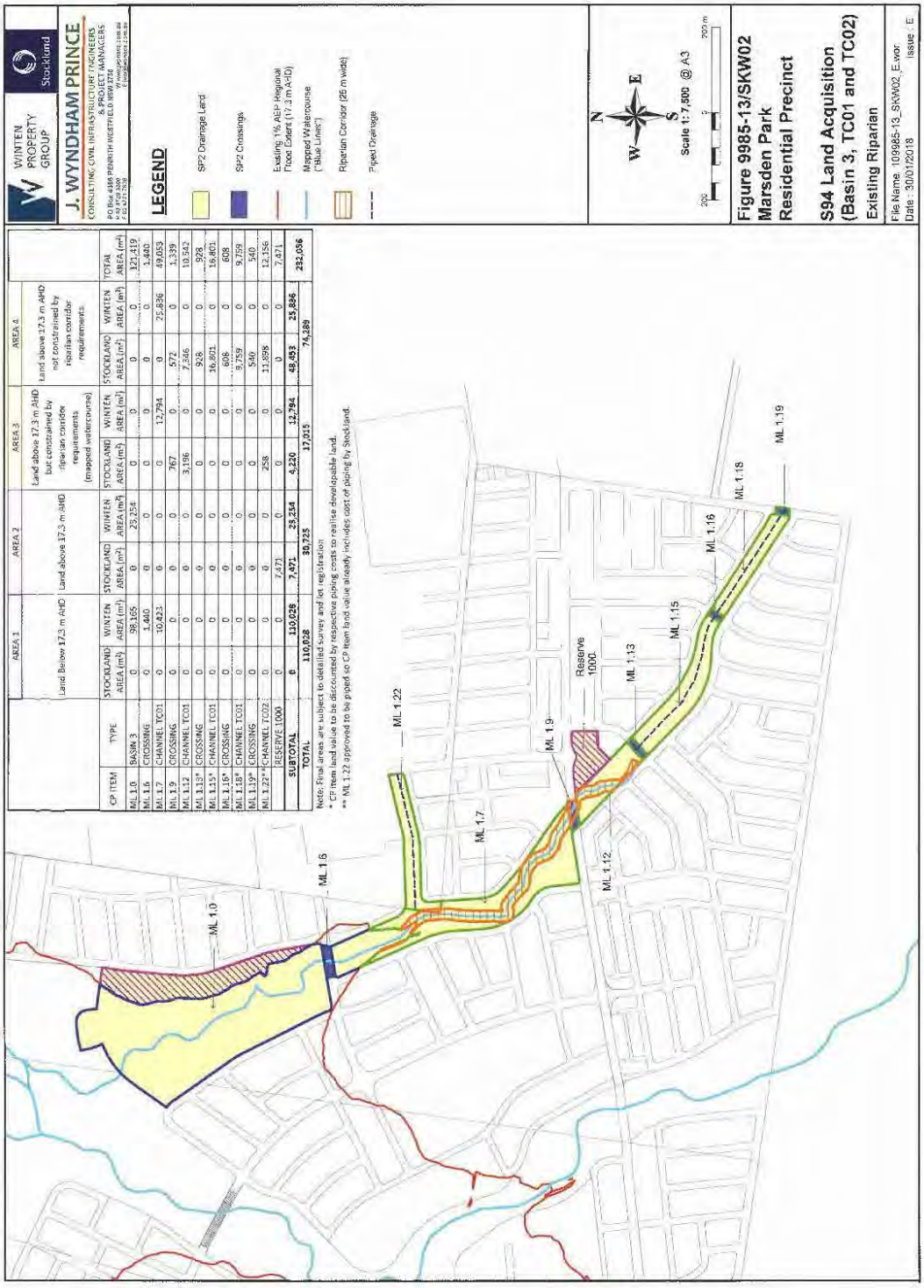
_____

Witness

draft

Schedule 11

Water Management Land Plan



CP ITEM	TYPE	AREA 1		AREA 2		AREA 3		AREA 4		
		Land Below 17.3 m AHD		Land above 17.3 m AHD		Land above 17.3 m AHD but constrained by riparian corridor requirements (mapped watercourse)		Land above 17.3 m AHD not constrained by riparian corridor requirements.		
		STOCKLAND AREA (m²)	WINTEN AREA (m²)	STOCKLAND AREA (m²)	WINTEN AREA (m²)	STOCKLAND AREA (m²)	WINTEN AREA (m²)	STOCKLAND AREA (m²)	WINTEN AREA (m²)	TOTAL AREA (m²)
ML 1.0	BASIN 3	0	98,155	0	23,354	0	0	0	0	121,419
ML 1.6	CROSSING	0	1,440	0	0	0	0	0	0	1,440
ML 1.7	CHANNEL TC01	0	10,423	0	0	0	12,794	0	25,836	49,053
ML 1.9	CROSSING	0	0	0	0	767	0	572	0	1,339
ML 1.12	CHANNEL TC01	0	0	0	0	3,196	0	7,346	0	10,542
ML 1.13*	CROSSING	0	0	0	0	0	0	928	0	928
ML 1.15*	CHANNEL TC01	0	0	0	0	0	0	16,801	0	16,801
ML 1.16*	CROSSING	0	0	0	0	0	0	608	0	608
ML 1.18*	CHANNEL TC01	0	0	0	0	0	0	9,759	0	9,759
ML 1.19*	CROSSING	0	0	0	0	0	0	540	0	540
ML 1.22**	CHANNEL TC02	0	0	0	0	258	0	11,898	0	12,156
	RESERVE 1000	0	0	7,471	0	0	0	0	0	7,471
	SUBTOTAL	0	110,018	7,471	23,354	4,220	12,794	48,493	25,836	232,056
	TOTAL	110,018		30,825		17,015		74,329		

Note: Final areas are subject to detailed survey and lot registration

* CP item land value to be discounted by respective piping costs to realise developable land.

** ML 1.22 approved to be piped so CP item land value already includes cost of piping by Stockland.

Schedule 12

Channel TC02 Works WIK Agreement

See the following pages

Blacktown
City Council

THE COUNCIL OF THE CITY OF BLACKTOWN

("the Council")

and

Stockland

("the Developer")

SECTION 7.11 WORKS-IN-KIND DEED

Number: WIK-12-2018

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EED is made on 28 September 2018

arties

Blacktown City Council ABN 18 153 831 768 of Civic Centre, 62 Flushcombe Road, Blacktown NSW 2148 ("the Council")

AND:
Stockland Development Pty Ltd
ABN 71 000 064 835
Level 25, 133 Castlereagh Street
Sydney NSW 2000
("the Developer")

RECITALS

A. In this Deed the following words and expressions shall have the meanings hereby assigned to them except where the context otherwise requires:

Act	Means the *Environmental Planning & Assessment Act, 1979 (NSW)* & amendments.
Authority	Means the Commonwealth or New South Wales government, a Minister of the Crown, a government department, a public authority established by or under any Act, a council constituted under the *Local Government Act 1993*, or a person or body exercising functions under any Act including a commission, panel, court, tribunal and the like.
Completion Date	The date specified in Schedule D hereto.
Construction Certificate	Has the same meaning as in the Act.
Contribution	The amount set out in condition 4.11 of the Development Consent (JRPP-16-03326), as indexed from time to time in accordance with the CPI.
Contribution Plan	Means the applicable contribution plan made by the Council under Section 7.18 of the Act, and adopted by the Council as amended from time to time.
Contribution Plan Work	Means an item of Work specified in the Contribution Plan.
Cost	Means a cost, charge, expense, outgoing, payment, fee and other expenditure of any nature.
Council	A reference to the "Council" includes a reference to its servants, agents, employees and sub-contractors.
CPI	The Consumer Price Index – Sydney All Groups as published by the Australian Bureau of Statistics.
Deed	Means this deed and includes any schedules, annexures and appendices to this deed.
Defect	Means anything that adversely affects, or is likely to adversely affect, the appearance, structural integrity, functionality or use or enjoyment of a Contribution Plan work or any part of a Work.

Liability Period	Means a period of 24 months from the Practical Completion Date.
elopment Application	The development application/s under Section 4.12 of the Act lodged by the Developer with the Council and described in Schedule A hereto.
Development Consent	The development consent/s granted by the Council under the Act to the Development Application(s).
Dispute	means a dispute or difference between the parties under or in relation to this Deed.
Equipment	Means any equipment, apparatus, vehicle or other equipment or thing to be used by or on behalf of the Developer in connection with the performance of its obligations under this Deed.
IPART	The Independent Pricing and Regulatory Tribunal, New South Wales.
Maintain	Means in relation to a Contribution Plan Work, keep in a good state of repair and working order, and includes repair of any damage to the Work but excludes any loss or damage to the extent it is caused or arises as a consequence of the negligent act or omission of Council or any other person.
Maintenance Period	Means a period of 24 months from the Practical Completion Date.
Planning Agreement	Means an agreement made under Part 7, Division 7.1, Subdivision 2 of the Act.
Plans	The approved plans for the Works in Schedule C.
Practical Completion	The Works have been completed in accordance with the requirements of clause 1(a) of this Deed, except for minor defects and omissions that do not prevent the Works from being reasonably capable of being used for its intended purpose.
Practical Completion Date	The date on which Practical Completion of the Works is achieved and as notified under clause 1(d) of this Deed. .
Rectification Notice	Means a notice in writing: (a) identifying the nature and extent of a Defect; (b) specifying the works or actions that are required to Rectify the Defect; and (c) specifying the date by which or the period within which the Defect is to be rectified.
Rectify	Means rectify, remedy or correct.
Site	The land defined in Schedule B on which the Works will be carried out on.
Works	The whole of the activity described in Schedule C to be carried out and completed by the Developer in accordance with this Deed.
Works Development Consent	Means a development consent, within the meaning of the Act, authorising the construction of the Works.
Total Value of Works	The greater of:

	(a) the value of the Works to be undertaken under this Deed as set out in Schedule A; or (b) if the Minister administering the *Environmental Planning and Assessment Act 1979* determines a different value for the Works following an assessment by IPART, then that amount, subject to any variation under this Deed.
Work-As-Executed Plan	Means detailed plans and specifications of the completed Work.

Words importing the singular include the plural and vice versa.

Words importing any gender include any other gender.

Schedules to this Deed form part of it.

B. Development consent has been granted to the Development Application subject to conditions, including for the payment of the Contribution.

C. The Developer has offered under Section 7.11 of the Act to provide the Works as a material public benefit in satisfaction of the conditions of Development Consent which require payment of the contribution and the Council has agreed to accept the carrying out of these Works as a material public benefit in satisfaction of the conditions requiring payment of the Contribution upon and subject to the Developer complying with the terms, covenants and conditions contained in this Deed.

OPERATIVE PROVISIONS

1. Developer to Carry out Works

(a) The Developer must at no cost to the Council commence, carry out and complete the Works on the Site in accordance with the Works Development Consent and Construction Certificate and Plans authorising the carrying out of the Works.

(b) The Developer must commence work on the Site forthwith and must proceed with and complete the Works in accordance with this Deed and the Plans.

(c) The Developer must complete the Works on or before the Completion Date or within any extended time granted or allowed by the Council in writing.

(d) The Works are complete for the purposes of this Deed when the Council gives the Developer notice in writing that Practical Completion has been achieved.

(e) The Developer must lodge a bond or guarantee for the amount that is 0.25 times the Total Value of the Works prior to execution of this Deed. The provisions of Schedule E apply to any such bond or guarantee.

2. Failure to Carry out Works

If the Developer fails to complete the Works by the Completion Date or within any extended time granted or allowed by the Council in writing then:

(a) the Council shall be entitled to call up the bond or guarantee lodged under Clause 1(e), to enable Council to complete and/or rectify the Works.

(b) should the amount of the bond or guarantee lodged under Clause 1(e) be insufficient to complete and/or rectify the Works, then the Council may claim the cost of completing the Works (as assessed in a fair and reasonable manner having regard for the status and condition of the works thus far completed, by the Council and notified in writing to the Developer) as a debt in any court of competent jurisdiction. The cost shall be assessed as at the time the Works are carried out.

uction and Variation of Contribution

(a) Subject to clause 3(b), upon the Works being completed for the purposes of this Deed the Council will reduce the Contribution payable by the Developer pursuant to the Development Consent by the Total Value of Works.

(b) In the event that the Works are incorporated into a Planning Agreement and the Total Value of the Works is applied as a credit or an offset toward satisfying monetary contributions payable under that Planning Agreement:

(i) the reduction of the Contribution payable by the Developer pursuant to the Development Consent by the Total Value of Works in 3(a) will not apply; and

(ii) condition 4.1.1 of the Development Consent will apply without any reduction.

4. Availability of Credit for Works

The Developer in executing this Deed acknowledges that the Section 7.11 Contributions credits will not be available until Council has provided written notice under clause 1(d) that Practical Completion of the Works has been achieved.

5. Warranty by Developer

The Developer warrants to the Council:

(a) that it has negotiated and obtained from the owner of each parcel of land within the Site a right or licence to enter upon that land for the purposes of carrying out the works; and

(b) that it has negotiated and obtained, or will before commencing the Works negotiated and obtain, from the owners of land adjoining the Site their acceptance of and consent to the carrying out of the Works.

6. Protection of Persons and Property

(a) The Developer must ensure that all barricades, guards, fencing, temporary roadways, footpaths, signs and lighting lawfully required by any public or other authority or necessary for the protection of the Works or the Site during construction or for the safety & convenience of workers, the public & others are erected & maintained until the end of the Maintenance Period & must remove the same upon completion of the Works, or as otherwise agreed with Council.

(b) In carrying out the Works, the Developer must avoid obstruction or damage to roadways and footpaths, drains or watercourses and public utility and other services on or near to the Site which are visible or the location of which can be ascertained by the Developer and must remove immediately and at its own cost any obstruction and make good any damage caused thereby.

(c) Despite any other clause in this Deed, the Developer is not responsible for removing any obstructions or making good any damage to the extent it is caused or arises as a consequence of:

a. the negligent act or omission of Council; or

b. any other person.

7. Indemnity and Insurance

(a) The Developer agrees to hold the Council harmless and indemnified against any claims demands actions proceedings damages or costs whatsoever arising out of constructing of the Works or any part thereof, and the Developer hereby warrants that insurances in respect of property damage, public risk, public liability, death or injury to employees have been effected. Insurances must be for the amounts specified in Schedule F and, unless otherwise specified elsewhere in this Deed, must be effected with an insurer or

insurers approved in writing by the Council which approval shall not be unreasonably withheld. All policies must be maintained during the currency of the Works and the Developer must produce certificates of currency prior to execution of this Deed by Council and within seven (7) days any future written demand by the Council during the period of this Deed.

(b) Whenever requested in writing at any time and from time to time the Developer shall produce evidence to the satisfaction of the Council of the insurances effected and maintained for the purposes of this Deed. If, after being requested in writing by the Council so to do, the Developer fails to produce evidence of compliance with its insurance obligations hereunder or any of them the Council may effect and keep in force any such insurance and pay such premiums as may be necessary for that purpose and the amounts so paid shall be a debt due from the Developer to the Council which may be deducted or recovered by the Council as it deems appropriate.

8. Care of Works

(a) While the Works are being carried out on the Site the Developer is liable for the care of the Works and all material, construction plant and other things that are brought on to the site by or on behalf of the Developer for the purpose of carrying out the Works.

(b) The Developer must at its own cost make good to the satisfaction of the Council any loss of or damage to the Works or to the Site resulting from any cause whatsoever until the end of the Defects Liability Period except that the Developer is not responsible for making good any loss or damage to the extent it is caused or arises as a consequence of:

a. the negligent act or omission of Council; or

b. any other person.

9. Access to Site and Works

Prior to commencement of the Works the Developer must produce evidence satisfactory to the Council that any persons authorised in writing by the Council have access to the Works and the Site for any purpose including completion of the Works (in the event of default), and the examination and testing of any work or materials at any place where any such work is being or is to be carried out or materials are being prepared.

10. Removal of Structures

The Developer is responsible for payment of any compensation which may become payable to the owner of any of the lands forming part of the Site resulting from the demolition removal or re-siting of any structure within the Site.

11. Variation of Works

(a) The design or specification of a Contribution Plan Work that is required to be carried out by the Developer under this Deed may be varied by agreement in writing between the parties, acting reasonably, without the necessity for an amendment to this Deed.

(b) Without limiting clause 11(a), the Developer may make a written request to the Council to determine a variation to the design or specification of a Contribution Plan Work in order to enable it to comply with the requirements of any Authority imposed in connection with any Approval relating to the carrying out of the Work.

(c) The Council is not to unreasonably delay or withhold its determination to a request made by the Developer under clause 11(b).

(d) The Council, acting reasonably, may from time to time give a written direction to the Developer requiring it to vary the design or specification of a Contribution Plan Work

before the Work is carried out in a specified manner and submit the variation to the Council for approval.

(e) The Developer is to comply promptly with a direction referred to in clause 11(d) at its own cost.

(f) If there is variation to the design or specification of the Works under this clause 11 that results in an increase to the Total Value of Works, the parties acknowledge and agree that the Developer may give written notice to the Council ("Variation Notice") requesting that the Total Value of Works be varied to an amount nominated by the Developer and the Developer may provide any such evidence or documentation as required to support the varied Total Value of Works.

(g) Council must, within 7 business days of receipt of the Variation Notice, either notify the Developer in writing that it:

a. agrees with the varied Total Value of Works; or

b. disagrees with the varied Total Value of Works and identify reasons for its disagreement.

(h) In the event that the Council disagrees with the varied amount nominated under the Variation Notice by the Developer under clause 11(f):

a. the parties are to meet and negotiate in good faith to reach an agreed varied amount; and

b. failing an agreement in clause 11(h)(a), proceed to dispute resolution under clauses 21 or 22, as applicable.

12. Supervision

(a) The Works must be executed in accordance with this Deed and in accordance with any directions of the Council given hereunder. Any direction which may be or is given to the Developer by the Council may be given either orally or in writing. When any such direction is in the first instance given orally the Council shall as soon as practicable after it is so given confirm it in writing addressed to and issued or given to or served upon the Developer. For the purposes of this clause, directions may be given by or on behalf of the Council by the Council's Director of City Assets or his appointed delegate(s).

(b) The Developer must appoint a project manager to supervise the Works, such project manager to be approved in writing by the Council prior to his or her appointment (the "Project Manager"). The Project Manager must submit to the Council regular reports on the progress of the Works, such reports to be submitted to Council at least monthly.

13. Special Conditions

(Schedule G).

14. Defects Liability and Maintenance Period

(a) The Developer must upon the Council's written direction correct all defects, or other faults which may appear within the Defects Liability Period arising out of defective or improper materials or workmanship at its own cost and within such reasonable time as is specified by the Council's direction. In the event of default by the Developer under this clause the Council may recover from the Developer the costs associated therewith as a debt due and payable to the Council.

(b) The Developer must Maintain the Works during the Maintenance Period.

(c) The Developer is to lodge with Council before the Practical Completion Date a maintenance bond or guarantee which will be held as surety and the Council is not

obliged to provide notice of Practical Completion under clause 1(d) until that bond or guarantee is received. The provisions of Schedule E apply to any such bond or guarantee. The maintenance bond or guarantee is to be 5% of the agreed value of the Works and will be held until the later of:

a. the end of the period of 24 months from the Practical Completion Date; or

b. if the Council has given the Developer a Rectification Notice during the Defects Liability Period under clause 15(a) or a notice under clause 16(a) in respect of maintenance of the Works during the Maintenance Period, the date the relevant Defect or breach has been Rectified.

(d) Alternatively if the Developer so wishes the bond or guarantee lodged under Clause 1(e) can be held for the duration of the Maintenance Period.

15. Rectification of defects

(a) The Council may give the Developer a Rectification Notice during the Defects Liability Period.

(b) The Developer, at its own cost, is to comply with a Rectification Notice according to its terms and to the reasonable satisfaction of the Council.

(c) The Council is to do such things as are reasonably necessary (excluding financial assistance) to enable the Developer to comply with a Rectification Notice that has been given to it under clause 15(a).

16. Breach of obligations

(a) If Council reasonably considers that the Developer is in breach of any obligation under this Deed, it may give a written notice to the Developer:

a. specifying the nature and extent of the breach,

b. requiring the Developer to:

i. rectify the breach if it reasonably considers it is capable of rectification, or

ii. pay compensation to the reasonable satisfaction of Council in lieu of rectifying the breach if it reasonably considers the breach is not capable of rectification,

c. specifying the period within which the breach is to be rectified or compensation paid, being a period that is reasonable in the circumstances.

(b) If the Developer fails to fully comply with a notice referred to in clause 16(a), Council may, without further notice to the Developer, call-up the bond or guarantee provided by the Developer under clause 1(e) or clause 14 of this Deed and apply it to remedy the Developer's breach.

(c) If the Developer fails to comply with a notice given under clause 16(a) relating to the carrying out of Work under this Deed, Council may step-in and remedy the breach and may enter, occupy and use any land owned or controlled by the Developer and any Equipment on such land for that purpose.

(d) Any costs incurred by Council in remedying a breach in accordance with clause 16(b) or clause 16(c) may be recovered by Council by either or a combination of the following means:

a. by calling-up and applying the bond or guarantee provided by the Developer under this Deed under clause 1(e) or clause 14, or

b. as a debt due in a court of competent jurisdiction.

(e) For the purpose of clause 16(d), Council's costs of remedying a breach the subject of a notice given under clause 16(a) include, but are not limited to:

a. the costs of Council's servants, agents and contractors reasonably incurred for that purpose,

b. all fees and charges necessarily or reasonably incurred by Council in remedying the breach, and

c. all legal costs and expenses reasonably incurred by Council, by reason of the breach.

(f) Nothing in this clause 16 prevents Council from exercising any rights it may have at law or in equity in relation to a breach of this Deed by the Developer, including but not limited to seeking relief in an appropriate court.

17. Service of Documents

Service of any documents or notices hereunder shall be deemed to have been served if sent by prepaid post or left at the address of the party shown in the introduction to this Deed. Any documents sent by prepaid post shall be deemed to have been issued or given to or served upon the party at the time at which it would normally arrive in the ordinary course of post at the address to which it is directed.

18. Assignment

The rights conferred hereunder shall not be assigned or transferred to any other party except with the written consent first obtained from the Council.

19. Not used

20. Costs

Each party shall pay their own costs of and incidental to this Deed except the legal fees of both the Developer and Council which must be paid by the Developer.

In addition to any other amount payable under this Deed, the Developer will pay the amount of any tax in the form of a goods and services tax levied in respect of:

(a) the carrying out of the Works under this Deed; or

(b) the provision by the Developer of any security pursuant to this Deed; or

(c) any calling up enforcement cancellation or refund or such security.

21. Dispute Resolution – expert determination

(a) This clause applies to a Dispute between any of the parties to this Deed concerning a matter arising in connection with this Deed that can be determined by an appropriately qualified expert if:

a. the parties to the Dispute agree that it can be so determined, or

b. the Chief Executive Officer of the professional body that represents persons who appear to have the relevant expertise to determine the Dispute gives a written opinion that the Dispute can be determined by a member of that body.

(b) A Dispute to which this clause applies is taken to arise if one party gives another party a notice in writing specifying particulars of the Dispute.

(c) If a notice is given under clause 21(b), the parties are to meet within 10 Business Days of the notice in an attempt to resolve the Dispute.

(d) If the Dispute is not resolved within a further 20 Business Days, the Dispute is to be referred to the President of the Resolution Institute (NSW Chapter) to appoint an expert for expert determination.

(e) The expert determination is binding on the parties except in the case of fraud or misfeasance by the expert.

(f) Each party is to bear its own costs arising from or in connection with the appointment of the expert and the expert determination.

(g) The parties are to share equally the costs of the President, the expert, and the expert determination.

22. Dispute Resolution - mediation

(a) This clause applies to any Dispute arising in connection with this Deed other than a Dispute to which clause 21 applies.

(b) Such a Dispute is taken to arise if one party gives another party a notice in writing specifying particulars of the Dispute.

(c) If a notice is given under clause 22(b) the parties are to meet within 10 Business Days of the notice in an attempt to resolve the Dispute.

(d) If the Dispute is not resolved within a further 20 Business Days, the parties are to mediate the Dispute in accordance with the mediation rules of the Resolution Institute (NSW Chapter) as published from time to time and are to request the President of the Resolution Institute (**President**) to select a mediator.

(e) If the Dispute is not resolved by mediation within a further 20 Business Days, or such longer period as may be necessary to allow any mediation process which has been commenced to be completed, then the parties may exercise their legal rights in relation to the Dispute, including by the commencement of legal proceedings in a court of competent jurisdiction in New South Wales.

(f) Each party is to bear its own costs arising from or in connection with the appointment of a mediator and the mediation.

(g) The parties are to share equally the costs of the President, the mediator, and the mediation.

SIGNED AS A DEED

SIGNED, SEALED AND DELIVERED in my presence by Blacktown City Council by its attorney Mr Michael Mamo who is personally known to me.

Signature of Witness

28 September 2018.

Date

Jennifer Rodger

Name of Witness (BLOCK LETTERS)

Section 94 Officer.

Occupation of Witness

.....

Blacktown City Council by its Attorney
Glennys Louise James
pursuant to power of attorney
Registered Book 4655 No. 18

Blacktown City Council by its attorney Michael Mano pursuant to power of attorney Registered Book .....No..... who states that no notice of revocation of the power of attorney has been received.

SIGNED, SEALED AND DELIVERED in my presence by Stockland Development Pty Ltd by its attorney _____ who is personally known to me.

_____

_____

Signature of Witness *Date*

_____

Name of Witness (BLOCK LETTERS)

_____

Occupation of Witness

_____

Stockland Development Pty Ltd by its attorney RICHARD RHYDDERCH pursuant to power of attorney Registered Book 4624 No. 95 who states that no notice of revocation of the power of attorney has been received.

_____

SCHEDULE A – DEVELOPMENT APPLICATION DETAILS

File / Determination No: JRPP-16-03326

Proposed Development: Construction of a seniors living housing development comprising of 114 dwellings, a club house and community title road on proposed lots 2663 and 2511 and concurrent Community Title subdivision into 114 residential lots and 1 community title lot

Description of land to which development application relates: Lots 1&2 DP235714, Lot 112 DP1190510 and Lot 1392 DP1205498, Elara Boulevard MARSDEN PARK

Relevant Contribution Plan:- Contribution Plan CP No 21 – Marsden Park

Section 7.11 contributions payable under condition 4.1.1 of JRPP-16-03326 are:

No. of intended dwellings: 114
Contributions $3,420,000

The amounts below as stated in the JRPP -16-03326 which, if not for the Ministerial Direction, would have applied to this DA.

Contribution Item	Amount	Relevant C.P
Stormwater Quantity	$3,692,810	CP21
Stormwater Quality	$510,709	CP21
Traffic Management	$769,094	CP21
Open Space	$2,631,023	CP21
Community Facilities	$33,794	CP21
E2 Conservation Zone	$83,667	CP21
Aquatic Facility	$55,051	CP21
Total contributions	$7,776,148	

***Total Value of Contribution Payable as stated in the JRPP-16-03326 is* $3,420,000**

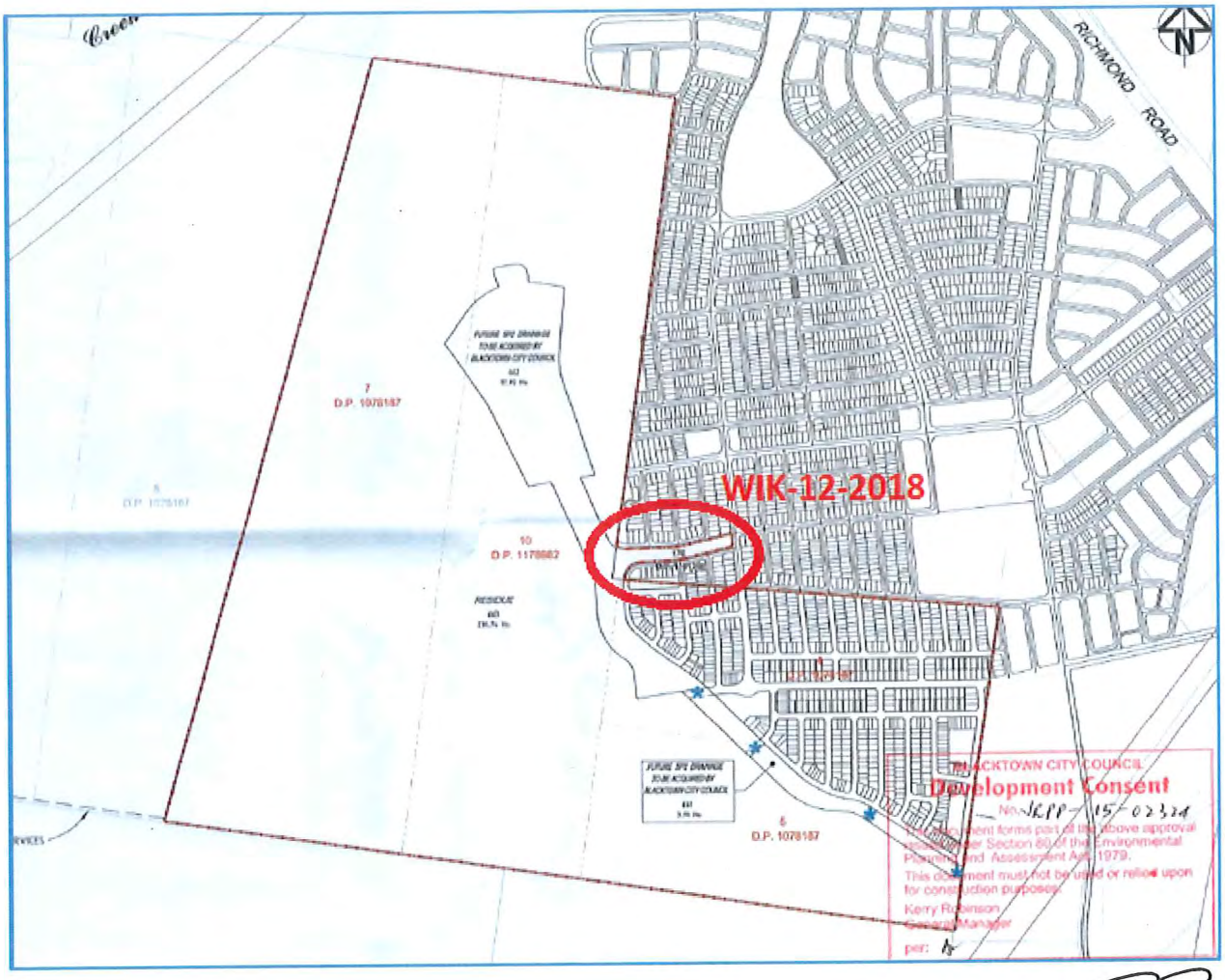
Total Value of Works

Contribution Plan Work	Amount
ML1.22 - 33m wide landscaped open channel (modified full item)	$1,506,000.00
ML1.23 – GPT (full item)	$ 292,111.00
Total Value of Works	$1,798,111.00
Less 3% Supervision Fees	$ 53,943.00
Total Offset Amount against Section 7.11 Contribution	$1,744,168.00

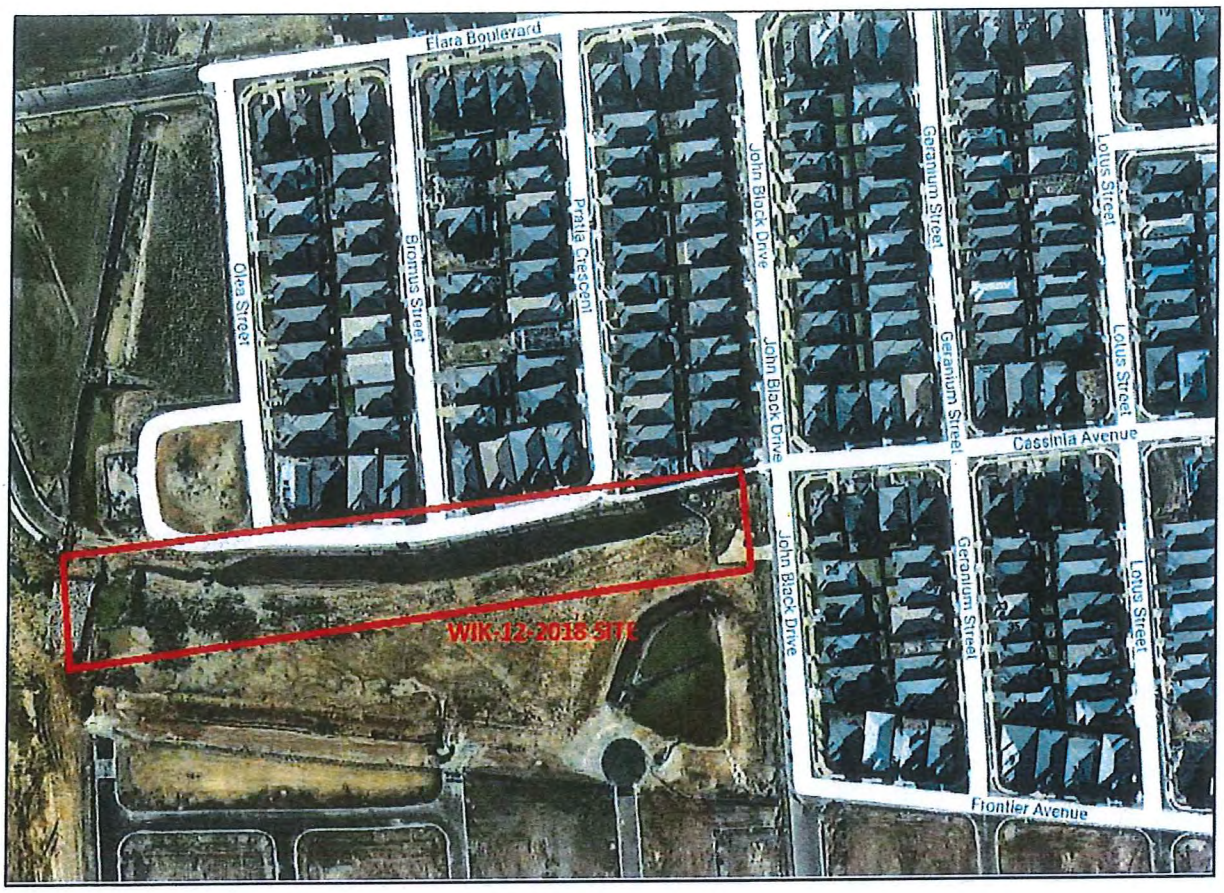
SCHEDULE B – SITE DESCRIPTION

Lot 9 in DP1239531

Location Plan



SCHEDULE C – DESCRIPTION OF ACTIVITY



- This Deed is for the construction of the following item in Contribution Plan No: 21 – Marsden Park
  - ML1.22 - 33m wide landscaped open channel (full item)
    Note: This item has been modified as trunk drainage lines instead of open channel by the developer and approved by Council.
  - ML1.23 – GPT (full item)
- These works are covered by Engineering plans prepared by J Wyndham Prince Pty Ltd, drawing numbers as listed below and approved by Council 7 September 2018 under CC-18-0774.

Plan Number	Plan Title	Revision	Prepared By
11035005CC100	COVER SHEET	B	J. Wyndham Prince
11035005CC101	NOTES, LEGEND & INDEX	B	J. Wyndham Prince
11035005CC102	OVERALL ARRANGEMENT PLAN	B	J. Wyndham Prince
11035005CC103	SURVEY AND UTILITIES PLAN SHEET 1	A	J. Wyndham Prince
11035005CC104	SURVEY AND UTILITIES PLAN SHEET 2	A	J. Wyndham Prince
11035005CC105	ENVIRONMENTAL CONSTRAINTS PLAN/CONTROLLED ACTIVITY APPROVAL PLAN	B	J. Wyndham Prince

11035005CC106	BULK EARTHWORKS PLAN	B	J. Wyndham Prince
11035005CC107	ENGINEERING PLAN SHEET 1	B	J. Wyndham Prince
11035005CC108	ENGINEERING PLAN SHEET 2	B	J. Wyndham Prince
11035005CC109	ENGINEERING PLAN SHEET 3	B	J. Wyndham Prince
11035005CC110	PATH LONGSECTIONS SHEET 1	B	J. Wyndham Prince
11035005CC111	PATH LONGSECTIONS SHEET 2	B	J. Wyndham Prince
11035005CC112	PATH LONGSECTIONS SHEET 3	B	J. Wyndham Prince
11035005CC113	PATH LONGSECTIONS SHEET 4	B	J. Wyndham Prince
11035005CC114	CROSS SECTIONS KEY PLAN	B	J. Wyndham Prince
11035005CC115	CROSS SECTIONS SHEET 1	B	J. Wyndham Prince
11035005CC116	CROSS SECTIONS SHEET 2	B	J. Wyndham Prince
11035005CC117	CROSS SECTIONS SHEET 3	B	J. Wyndham Prince
11035005CC118	CROSS SECTIONS SHEET 4	B	J. Wyndham Prince
11035005CC119	CROSS SECTIONS SHEET 5	B	J. Wyndham Prince
11035005CC120	CROSS SECTIONS SHEET 6	B	J. Wyndham Prince
11035005CC121	CROSS SECTIONS SHEET 7	B	J. Wyndham Prince
11035005CC122	CROSS SECTIONS SHEET 8	B	J. Wyndham Prince
11035005CC123	CROSS SECTIONS SHEET 9	B	J. Wyndham Prince
11035005CC124	FOOTPATH DETAILS	B	J. Wyndham Prince
11035005CC125	CATCHEMNT PLAN AND PIT SCHEDULE	B	J. Wyndham Prince
11035005CC126	DRAINAGE CALCULATIONS	B	J. Wyndham Prince
11035005CC127	DRAINAGE LONGDITUDINAL SECTION SHEET 1	B	J. Wyndham Prince
11035005CC128	DRAINAGE LONGDITUDINAL SECTION SHEET 2	B	J. Wyndham Prince
11035005CC129	DRAINAGE LONGDITUDINAL SECTION SHEET 3	B	J. Wyndham Prince
11035005CC130	GPT MAINTENANCE ACCESS DETAILS	A	J. Wyndham Prince
11035005CC131	OUTLET DETAILS	B	J. Wyndham Prince
11035005CC132	RETAINING WALL DETAILS	B	J. Wyndham Prince
11035005CC133	GROUND COVER PLAN	B	J. Wyndham Prince
11035005CC134	SEDIMENT EROSION PLAN	B	J. Wyndham Prince
11035005CC135	SEDIMENT EROSION NOTES	A	J. Wyndham Prince
11035005CC136	SIGNAGE AND LINEMARKING PLAN	A	J. Wyndham Prince

11035005CCA01	SPECIAL PIT 01/3	B	J. Wyndham Prince
11035005CCA02	SPECIAL PIT 01/4	B	J. Wyndham Prince
11035005CCA03	SPECIAL PIT 01/5	B	J. Wyndham Prince
11035005CCA04	SPECIAL PIT 01/6	B	J. Wyndham Prince
11035005CCA05	SPECIAL PIT 01/7	B	J. Wyndham Prince
11035005CCA06	SPECIAL PIT 02/4	B	J. Wyndham Prince
11035005CCA07	SPECIAL PIT N12/4	B	J. Wyndham Prince
11035005CCA08	SPECIAL PIT A15/40	B	J. Wyndham Prince
11035005CCA09	TC02OUTLET STRUCTURE AND CULVERT BASE SLAB DETAILS	B	J. Wyndham Prince
16575-S1	CONSTRUCTION NOTES & TYPICAL DETAILS	D	Inhouse Consulting Engineers
16575-S2	SPECIAL PIT 01/03 – SHEET 1	A	Inhouse Consulting Engineers
16575-S3	SPECIAL PIT 01/03 – SHEET 2	A	Inhouse Consulting Engineers
16575-S4	SPECIAL PIT 01/04 – SHEET 1	A	Inhouse Consulting Engineers
16575-S5	SPECIAL PIT 01/04 – SHEET 2	A	Inhouse Consulting Engineers
16575-S6	SPECIAL PIT 01/04 – SHEET 3	A	Inhouse Consulting Engineers
16575-S7	CULVERT BASE SLAB PLAN & DETAILS	A	Inhouse Consulting Engineers
16575-S8	SPECIAL PIT 01/05	A	Inhouse Consulting Engineers
16575-S9	SPECIAL PIT 01/06	A	Inhouse Consulting Engineers
16575-S10	SPECIAL PIT 01/07	A	Inhouse Consulting Engineers
16575-S11	SPECIAL PIT N12/3	A	Inhouse Consulting Engineers
16575-S12	SPECIAL PIT A15/-40	A	Inhouse Consulting Engineers
16575-S16	FOOTING, SLAB & VIEWING PLATFORM LAYOUTPLANS	B	Inhouse Consulting Engineers
16575-S17	FOOTING, SLAB & VIEWING PLATFORM DETAILS	A	Inhouse Consulting Engineers
16575-S18	CULVERT BASE SLAB & VIEWING PLATFORM DETAILS	B	Inhouse Consulting Engineers

16575-S19	SPECIAL PIT 02/04 – SHEET 1	A	Inhouse Consulting Engineers
16575-S20	SPECIAL PIT 02/04 – SHEET 2	A	Inhouse Consulting Engineers
LA-100	COVER SHEET	A	Paterson Design Studio
LA-101	SHEET REFERENCE PLAN	A	Paterson Design Studio
LA-200	LANDSCAPE PLAN	A	Paterson Design Studio
LA-201	LANDSCAPE PLAN	A	Paterson Design Studio
LA202	LANDSCAPE PLAN	A	Paterson Design Studio
LA-300	PLANTING PLAN	A	Paterson Design Studio
LA-301	PLANTING PLAN	A	Paterson Design Studio
LA-302	PLANTING PLAN	A	Paterson Design Studio
LA-410	DETAILS HARDSCAPE	A	Paterson Design Studio
LA-420	DETAILS SOFTSCAPE	A	Paterson Design Studio
LA-500	PLANTING SCHEDULE	A	Paterson Design Studio
LA-SPEC	LANDSCAPE SPECIFICATION	A	Paterson Design Studio

- Install and maintain erosion and sediment control measures prior to commencement of work, during the construction phase and during the maintenance period in accordance with Council's Erosion and Sediment Control Policy.

- The scope of works as detailed above is also to include the provision for the following ancillary works which are the responsibility of the Developer:
    - The Developer is required to ensure compliance of all contractors and sub-contractors with statutory requirements, including but not limited to the following:-
        - The NSW Office of Environment & Heritage.
        - Sydney Water Corporation Limited
        - Energy Provider
        - The Department of Planning & Environment
        - The Work Health and Safety Act
        - The NSW WorkCover Authority
        - SafeWork NSW

SCHEDULE D – COMPLETION DATE

The date that is 12 months from the date of execution of this Deed.

SCHEDULE E – PROVISIONS APPLICABLE TO BOND OR GUARANTEE
CLAUSE 1(e) and 14

1. The bond or guarantee must be expressed to be for the performance by the Developer of its obligations under this Deed, and must be in a form reasonably acceptable to the Council. *(See Adopted Council Policy P000328.4).*

2. The bond or guarantee must be given by:-

   2.1 Organisations which are APRA regulated Approved Deposit-taking Institutions (ADI's) with a minimum credit rating of "A" from Standard and Poors Rating Agency or "A2" from Moodys Rating Agency.

3. The Developer must ensure that the financial institution giving a bond or guarantee maintains a credit rating complying with paragraph 2.1 at all times whilst the bond or guarantee remains in force. They must also advise Council if the rating falls below the required level and then replace the security with one that meets Council's requirements.

4. If the financial institution which has given a bond or guarantee ceases to have a credit rating complying with paragraph 2.1 at any time whilst the bond or guarantee is in force then:-

   4.1 The Developer must notify the Council forthwith of that fact;

   4.2 Whether or not such notification has been given, the Developer must within 14 days of being required to do so by the Council lodge with the Council a substitute bond or guarantee complying with the provisions of this clause.

5. If the Developer fails to comply with a notice given under paragraph 4.2 within the time specified, the Developer will be in default under this Deed and the Council will be entitled to call up the bond or guarantee held by it.

6. Upon compliance by the Developer with a notice under paragraph 4.2, the Council will return the earlier bond or guarantee held by it to the Developer.

7. A bond or guarantee lodged under clause 1(e) of this Deed, or so much of it as has not been applied, will be returned by the Council to the Developer at the later of:-

   7.1 The Practical Completion Date; and

   7.2 The date the maintenance bond or guarantee is to be returned under clause 14(c) of this Deed, if the bond or guarantee lodged under clause 1(e) of this Deed is left with the Council in place of a maintenance bond or guarantee in accordance with Clause 14(d) of this Deed.

8 For the avoidance of doubt, a bond or guarantee lodged under clause 14(c) (and that was not retained from the bond or guarantee provided by the Developer to Council under clause 1(e)) will be returned by the Council to the Developer in accordance with clause 14(c).

SCHEDULE F – INDEMNITY AND INSURANCES

The Developer indemnifies the Council, its employees, officers, agents, contractors and workmen from and against all losses, damages, costs (including legal costs on a full indemnity basis), charges, expenses, actions, claims and demands whatsoever which may be sustained, suffered, recovered or made arising in connection with a negligent act or omission of the Developer in carrying out the works specified in this Deed.

1. The Developer is to take out or procure its contractors to take out and keep current to the satisfaction of the Council the following insurances in relation to the works specified in this Deed, required to be carried out by the Developer under this Deed up until the Work is taken to have been handed-over in accordance with this Deed:
   - Contract works insurance, noting the Council as an interested party, for the full replacement value of the Work (including the cost of demolition and removal of debris, consultants' fees and authorities' fees), to cover the Developer's liability in respect of damage to or destruction of the Work,
   - Public liability insurance for at least $20,000,000.00 for a single occurrence, which covers the Council, the Developer and any subcontractor of the Developer, for liability to any third party,
   - Workers compensation insurance as required by law, and
   - Any other insurance required by law.

2. If the Developer fails to comply with the clause above related to insurances, the Council may effect and keep in force such insurances and pay such premiums as may be necessary for that purpose and the amount so paid shall be a debt due from the Developer to the Council and may be recovered by the Council as it deems appropriate including:
   - By calling upon the Security provided by the Developer to the Council under this Deed, or
   - Recovery as a debt due in a court of competent jurisdiction.

3. The Developer is not to commence to carry out any Work unless it has first provided to the Council satisfactory written evidence of all of the insurances specified above.

SCHEDULE G – SPECIAL CONDITIONS

1. All work to be constructed in accordance with Blacktown City Council's Works Specification Civil, 2005 and Engineering Guide Developments, 2005.

2. All work to be inspected by Council's Works-in-Kind Supervisor.

3. The requirements shown in Council's Engineering Development Guide 2005 must be met where applicable for this project.

4. The Developer must not commence construction of the works or any part of the works until it has obtained all approvals necessary to start construction of the works, including Traffic Management Plan and Traffic Control Plan.

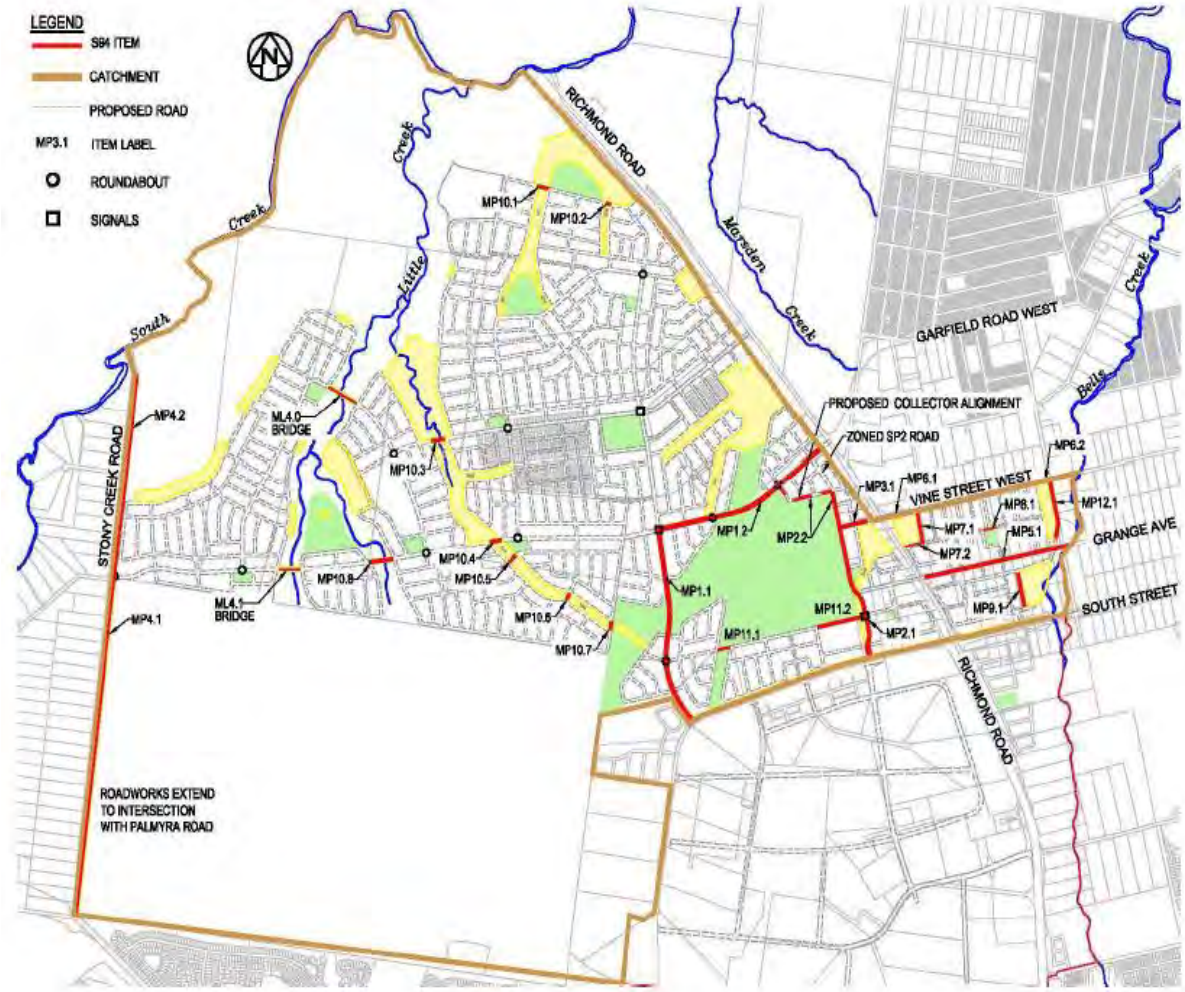
5. A full Works-as-Executed Plan is to be submitted to Council showing the finished levels of all works prior to issue Practical Completion.

Schedule 13

Reserves Plan

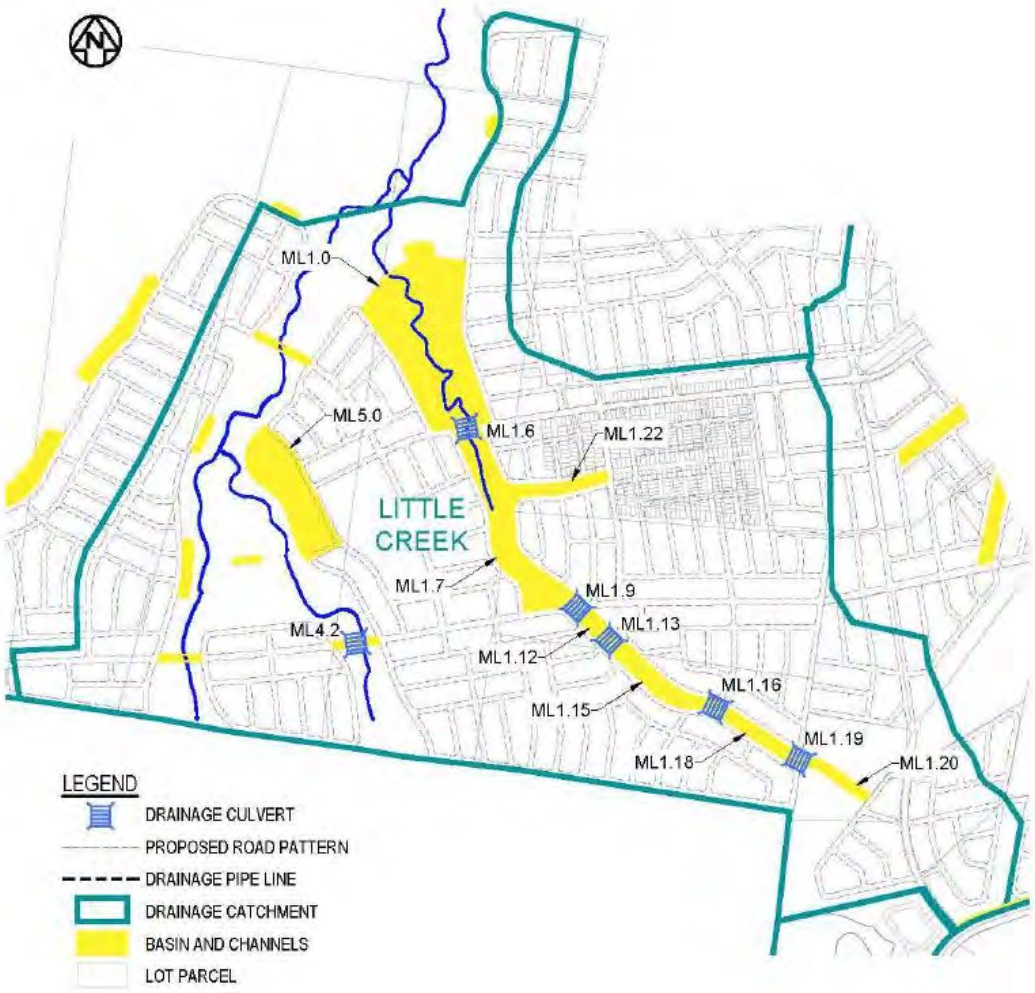
Schedule 14

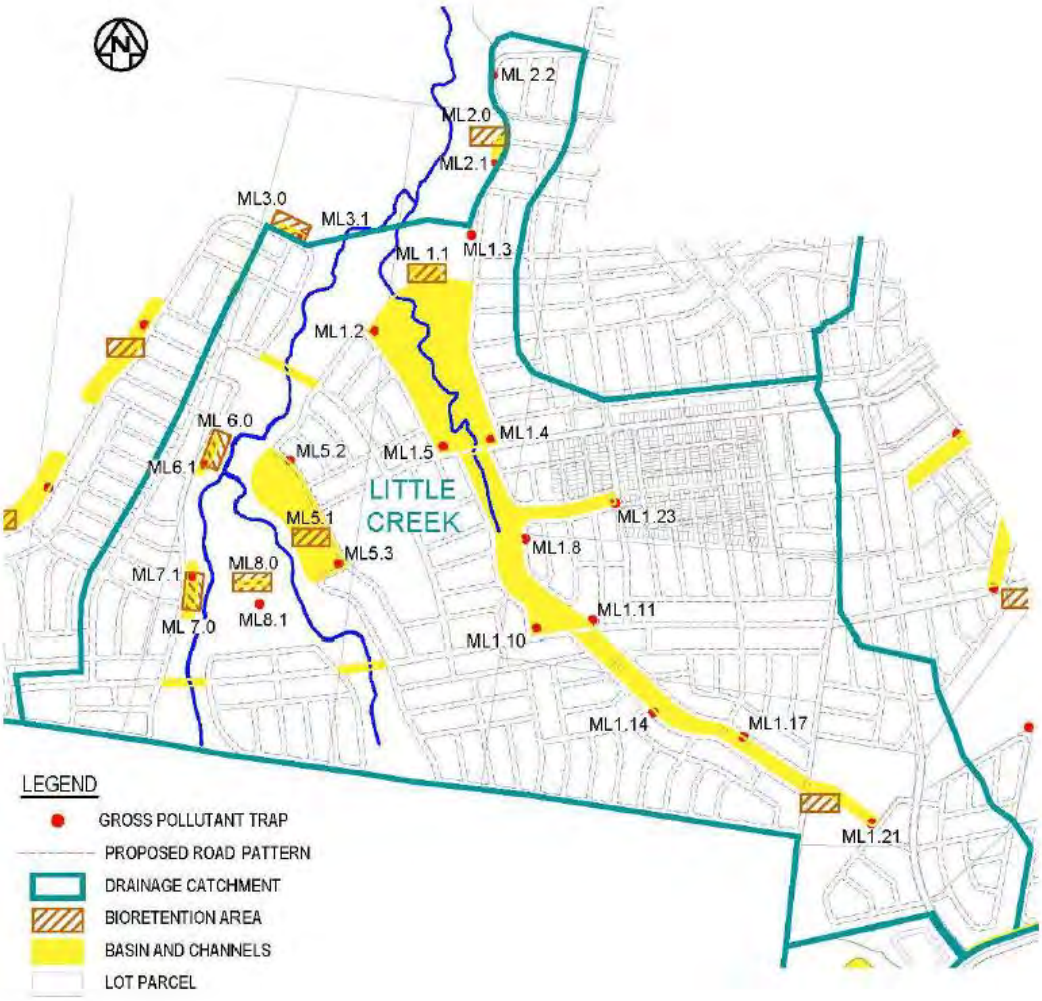
Traffic Management Facilities Plan

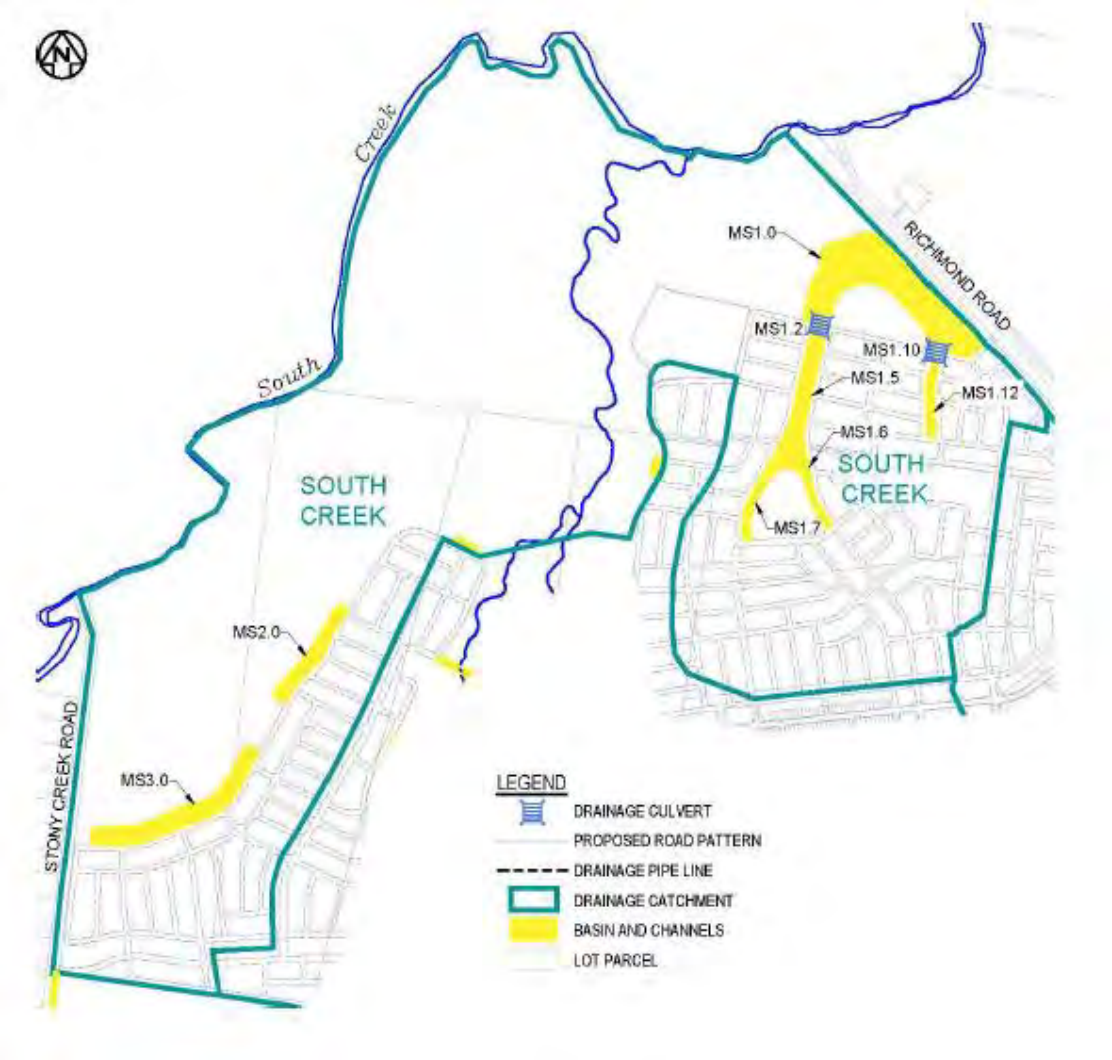


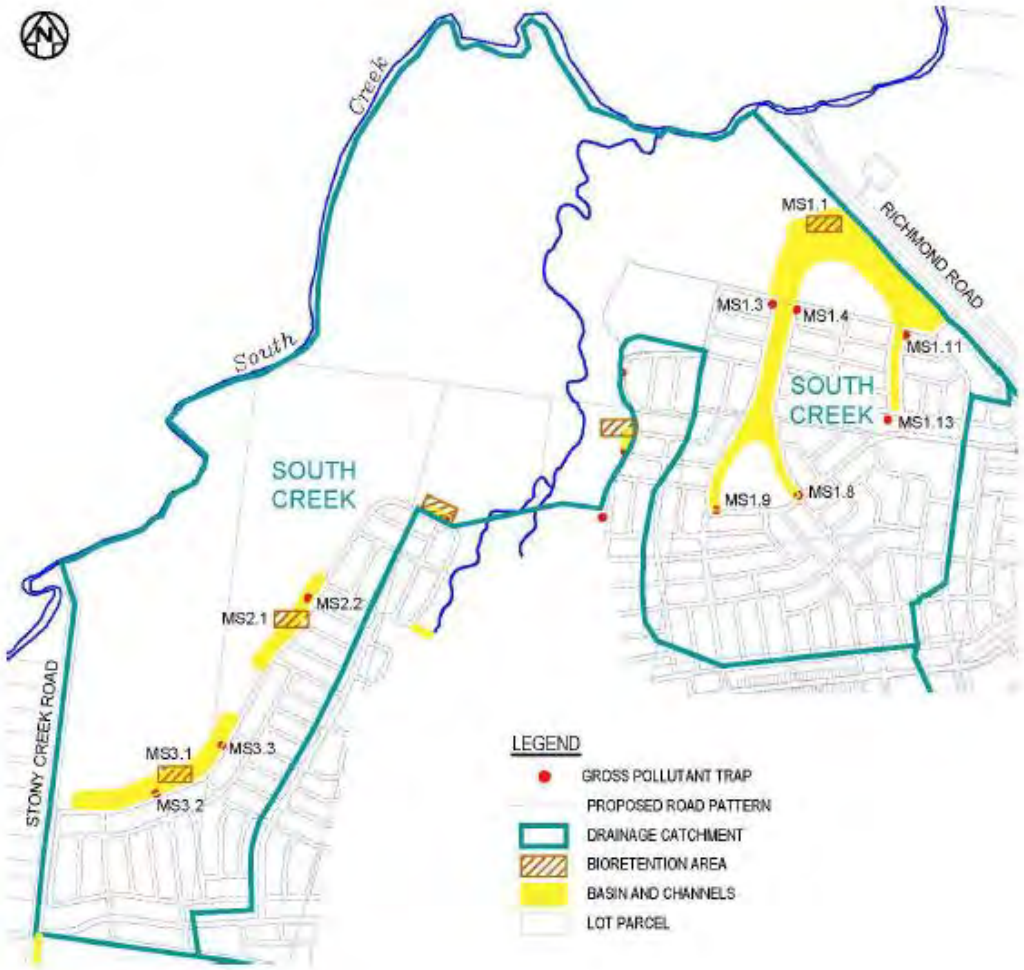
Schedule 15

Water Management Works Plans



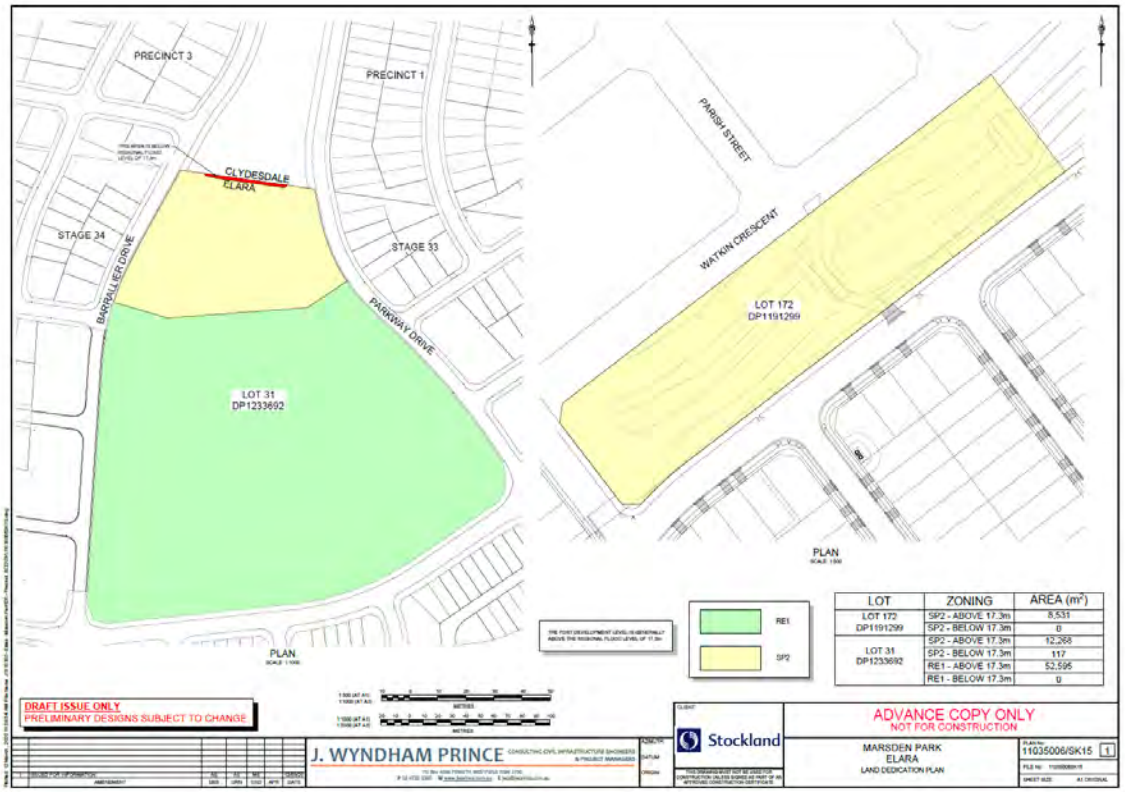

ML 2.2
ML2.0
ML2.1
ML3.0
ML3.1
ML 1.1
ML1.3
ML1.2
ML 6.0
ML6.1
ML5.2
ML1.5
ML1.4
LITTLE
CREEK
ML5.1
ML5.3
ML1.23
ML1.8
ML7.1
ML8.0
ML8.1
ML 7.0
ML1.11
ML1.10
ML1.14
ML1.17
ML1.21
LEGEND
GROSS POLLUTANT TRAP
PROPOSED ROAD PATTERN
DRAINAGE CATCHMENT
BIORETENTION AREA
BASIN AND CHANNELS
LOT PARCEL


South
Creek
RICHMOND ROAD
MS1.0
MS1.2
MS1.10
MS1.5
MS1.12
MS1.6
MS1.7
SOUTH CREEK
SOUTH CREEK
MS2.0
MS3.0
STONY CREEK ROAD
LEGEND
DRAINAGE CULVERT
PROPOSED ROAD PATTERN
DRAINAGE PIPE LINE
DRAINAGE CATCHMENT
BASIN AND CHANNELS
LOT PARCEL


South
Creek
RICHMOND ROAD
STONY CREEK ROAD
SOUTH CREEK
SOUTH CREEK
MS1.1
MS1.3
MS1.4
MS1.11
MS1.13
MS1.9
MS1.8
MS2.1
MS2.2
MS3.1
MS3.3
MS3.2
LEGEND
GROSS POLLUTANT TRAP
PROPOSED ROAD PATTERN
DRAINAGE CATCHMENT
BIORETENTION AREA
BASIN AND CHANNELS
LOT PARCEL

Schedule 16

Additional Land Dedication Plan



LOT	ZONING	AREA (m²)
LOT 172 DP1191299	SP2 - ABOVE 17.3m	8,531
	SP2 - BELOW 17.3m	0
LOT 31 DP1233692	SP2 - ABOVE 17.3m	12,268
	SP2 - BELOW 17.3m	117
	RE1 - ABOVE 17.3m	52,595
	RE1 - BELOW 17.3m	0

Schedule 17

Reserve 995 Works Plan

Schedule 18

Dog Park Plan

Elara Dog Park – Marsden Park NSW 2765 – Civil Engineering Works Prepared by Enspire			
Plan No.	**Plan Name**	**Rev**	**Date**
190101-CC-C01.01		1	15/07/2022
190101-CC-C01.21	Specification Notes	1	15/07/2022
190101-CC-C01.51	Setout and Alignment Control Plan	1	15/07/2022
190101-CC-C03.01	Erosion and Sedimentation Control Plan	1	15/07/2022
190101-CC-C03.21	Erosion and Sedimentation Control Details	1	15/07/2022
190101-CC-C04.01	Bulk Earthworks – Cut and Fill Plan	1	15/07/2022
190101-CC-C04.21	Bulk Earthworks – Cut and Fill Sections	1	15/07/2022
190101-CC-C05.01	Siteworks Plan	1	15/07/2022
190101-CC-C23.01	Safety in Design	1	15/07/2022

Elara Dog Park – Marsden Park NSW Prepared by Realm Studios			
Plan No.	**Plan Name**	**Rev**	**Date**
17143-L001	Landscape Works Legend & Planting Schedule	J	27/07/2022
17143-L201	Landscape Works General Arrangement	J	27/07/2022
17143-L301	Landscape Works Surface Finishes	I	27/07/2022
17143-L401	Landscape Works Setout and Levels Details Plan	I	27/07/2022
17143-L501	Landscape Works Planting Plan	H	7/04/2022
17143-L601	Landscape Works Sections & Details	G	27/07/2022
17143-L701	Landscape Works Details	F	21/03/2022

Execution

Executed as a Deed

Dated:

Executed on behalf of the Council

_____	_____
General Manager	**Witness**
_____	----------
Mayor	**Witness**

Executed on behalf of Stockland Development Pty Limited (ACN 000 064 835) by its attorney pursuant to power of attorney registered Book No who states that no notice of revocation of the power of attorney has been received in the presence of

_____

Attorney/Name

_____

Witness/Name

Appendix

(Clause 53)

Environmental Planning and Assessment Regulation 2000

(Clause 25E)

Explanatory Note

Draft Planning Agreement

Under s7.4 of the *Environmental Planning and Assessment Act 1979* (**EPA Act**).

Parties

Blacktown City Council ABN 18 153 831 768 of 62 Flushcombe Rd, Blacktown NSW 2148 (**Council**)

Stockland Development Pty Limited ABN 71 000 064 835 of Level 25, 133 Castlereagh Street, Sydney NSW 2000 (**Developer**)

Description of the Land to which the Draft Planning Agreement Applies

Lot 113 in Deposited Plan 1190510, Lot 6 in Deposited Plan 235714 and Lots 3 and 4 in Deposited Plan 1191653 (**Land**).

Description of Proposed Development

Subdivision of the Land into approximately 478 separate residential lots, various residual lots and Super Lots and associated works as approved by the Development Consent to the Stage 1 DA and Stage 2 DA forming part of the Marsden Park Precinct 1 development. Further, Final Lots as approved by any Future Development Applications including the Subdivision of any Super Lot into Final Lots (**Development**).

Summary of Objectives, Nature and Effect of the Draft Planning Agreement

Objectives of Draft Planning Agreement

The objectives of the Draft Planning Agreement are to provide infrastructure and facilities to meet the requirements of the Development and provide for the dedication of associated land by the Developer to Council. Specifically, the Developer will make the following contributions:

(a) works-in-kind for the construction of water management assets to the equivalent contribution value of $5,660 per residential lot;
(b) dedicate land associated with the construction of the water management assets to the equivalent contribution value of $13,578 per residential lot;
(c) works-in-kind for the construction of open space assets, including sporting field and local park to the equivalent contribution value of $23,405 per residential lot; and
(d) dedicate land associated with the construction of the open space assets to the equivalent contribution value of $17,035 per residential lot.

The total contribution value to be delivered under the Draft Planning Agreement is estimated at $28.5 million which is equivalent to approximately $59,679 per lot.

The total contribution value to be delivered under the Draft Planning Agreement exceeds what would normally be required by approximately $29,679 per lot (based on an agreed $30,000 per lot basis) (**Surplus Credit**). The final value of the Surplus Credit will be calculated pursuant to a formula set out under the VPA. The Council has agreed that any surplus credits accumulated by the Developer under the Draft Planning Agreement can be used by the Developer to offset other development contributions within the Marsden Park Precinct or other developments within the Local Government Area.

Nature of Draft Planning Agreement

The Draft Planning Agreement is a planning agreement under s7.4 of the EPA Act. It is a voluntary agreement, under which the Developer makes Development Contributions (as defined in clause 1.1 of the Draft Planning Agreement) for various public purposes (as defined in s 7.4(2) of the EPA Act).

Effect of the Draft Planning Agreement

The Draft Planning Agreement:

- relates to the carrying out by the Developer of the Development,
- excludes the application of s 7.11 and s 7.12 of the EPA Act to the Development,
- does not exclude the application of s 7.24 of the EPA Act to the Development,

- requires dedication of land and carrying out of works for open space and water management,
- the Developer is to provide security as follows:
  - provide a bank guarantee, bond or other form of security (as agreed) for the cost of the works to be carried out by the Developer prior to the issue of the Construction Certificate for the development; and
  - compulsory acquisition arrangements for the land dedication.
- is not to be registered on the titles to the Land except where adequate security has not been provided by a new owner (other than Stockland) of all or part of the land,
- imposes restrictions on the Developer transferring the Land or part of the Land or assigning an interest under the Agreement,
- provides a dispute resolution method where a dispute arises under the agreement, being mediation and expert determination,
- provides that the agreement is governed by the law of New South Wales,
- provides that the *A New Tax System (Goods and Services Tax) Act 1999* (Cth) applies to the agreement; and
- allows the Council to consider the Surplus Credit when determining whether to impose section 94 contributions on other developments within the LGA or impose developer contributions on developments within the Marsden Park Precinct.

Assessment of the Merits of the Draft Planning Agreement

The Planning Purposes Served by the Draft Planning Agreement

The Draft Planning Agreement:

- promotes and co-ordinates the orderly and economic use and development of the Land to which the Agreement applies, being land within the Marsden Park Precinct in the North West Growth Centre,
- allows for the delivery and co-ordination of water management facilities for the Marsden Park Precinct,
- provides land for public purposes in connection with the Development, specifically water management, sporting fields and local parks,
- provides and co-ordinates community services and facilities in connection with the Development, and

The Draft Planning Agreement provides a reasonable means of achieving these planning purposes by requiring the Developer to make monetary, works-in-kind and

land dedication contributions to Council, to facilitate the development of the Land in connection with the provision of necessary infrastructure and community facilities.

How the Draft Planning Agreement Promotes the Public Interest

The Draft Planning Agreement promotes the public interest by:

- promoting the objects of the EPA Act set out in sections 1.3(a), (c) and (j); and
- delivering infrastructure and facilities which benefit the local and wider community.

*How the Draft Planning Agreement Promotes the Elements of the **Council's Charter***

The Draft Planning Agreement promotes the elements of the Council's charter by:

- providing directly and after due consultation, adequate, equitable and appropriate services and facilities for the community;
- keeping the local community and the State government (and through it, the wider community) informed about its activities.

*Whether the Draft Planning Agreement Conforms with the **Authority's** Capital Works Program*

This Draft Planning Agreement conforms with the Council's capital works program.

Whether the Draft Planning Agreement specifies that certain requirements must be complied with before a construction certificate, occupation certificate or subdivision certificate is issued

This Draft Planning Agreement contains requirements that must be complied with, namely the provision of security before Construction Certificates are issued and carrying out of works and dedication of land, before Subdivision Certificates may be issued.

In the case of the water management assets, works must be completed and associated land must be dedicated to Council by the Developer prior to the issue of the Subdivision Certificate for the creation of the First Final Lot in the development (subject to provisions in the Draft Planning Agreement relating to deferral of works).

In the case of the sporting field and local park, works must be completed and associated land must be dedicated to Council by the Developer prior to the issue of the Subdivision Certificate for the creation of the 300th Final Lot (subject to provisions in the Draft Planning Agreement relating to deferral of works).

Tenth Deed of Variation to Elara Marsden Park Planning Agreement

Blacktown City Council

Stockland Development Pty Limited

Execution

Executed as a Deed

12/12/2022

Blacktown City Council by its Attorney
Steven Paul Harris
pursuant to power of attorney
Registered Book 4758 No 886

Dated: 12 December 2022

Executed on behalf of the Council by its duly authorised attorney under power of attorney dated_____ Registered Book_____No. _____ and by executing this document the attorney states that it has received no notice of revocation of the power of attorney

_____

Name of Attorney

_____

Witness

Executed on behalf of the Developer by its duly authorised attorney under power of attorney dated 4/4/2018 Registered Book 4741 No. 742 and by executing this document the attorney states that it has received no notice of revocation of the power of attorney.

Electronic signature of me, Sophie Ale, affixed by me on 19.10.2022

_____

Name of Attorney

Electronic signature of me, Jessica Ferguson, affixed by me on 19.10.2022

4/4/2018

_____

Witness

Appendix

(Clause 7)

Environmental Planning and Assessment Regulation 2021

(Clause 205)

Explanatory Note

Draft Deed of Variation to Marsden Park Planning Agreement (Draft Deed)

Under cl203(5)) of the *Environmental Planning and Assessment Regulation 2021*

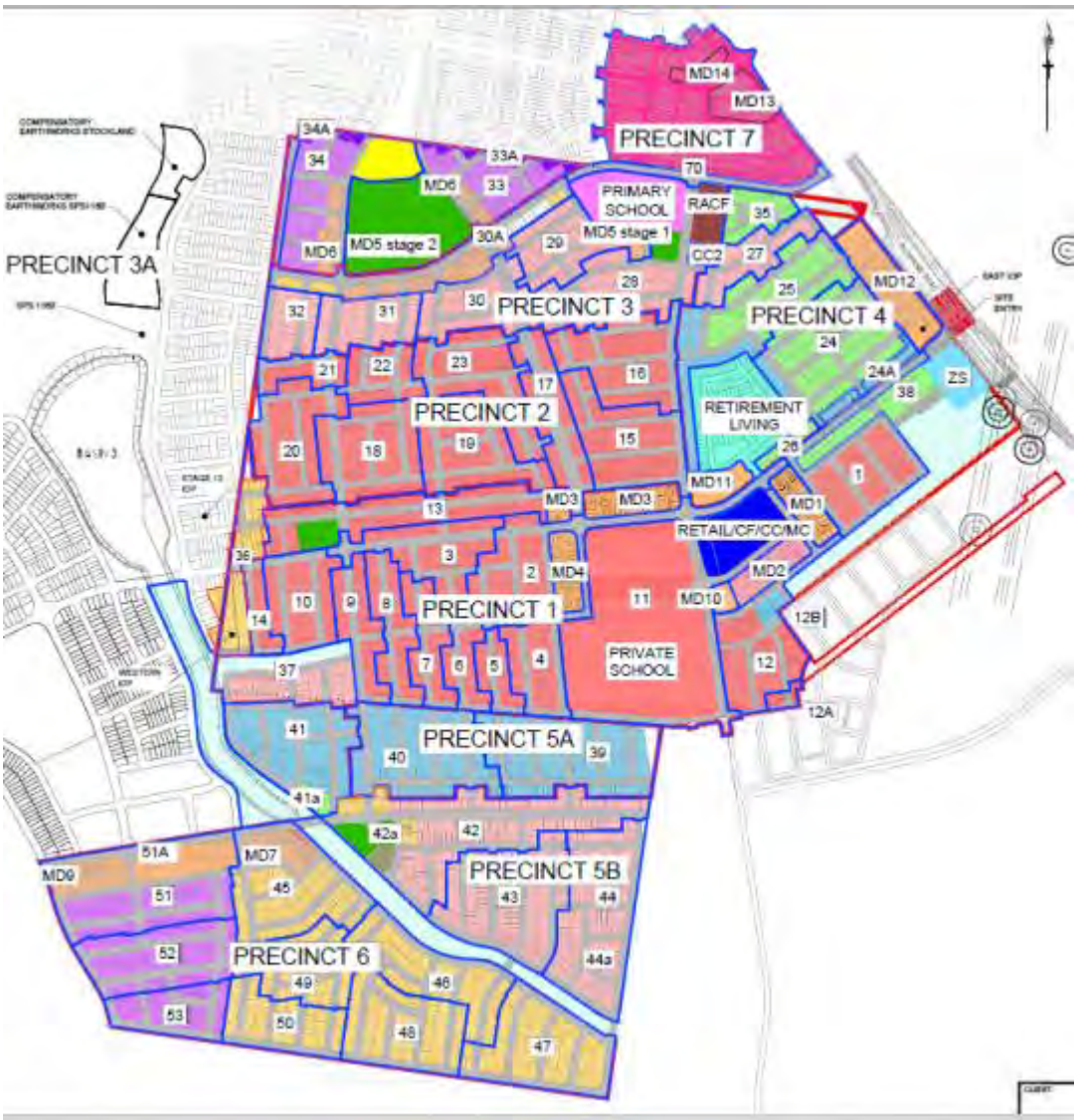
Parties

Blacktown City Council ABN 18 153 831 768 of 62 Flushcombe Rd, Blacktown NSW 2148 (Council)

Stockland Development Pty Limited ABN 71 000 064 835 of Level 25, 133 Castlereagh Street, Sydney NSW 2000 (**Developer**)

Description of the Land to which the Draft Deed Applies

The Draft Deed applies to the Land the subject of the Planning Agreement being the following land in the Council's local government area:



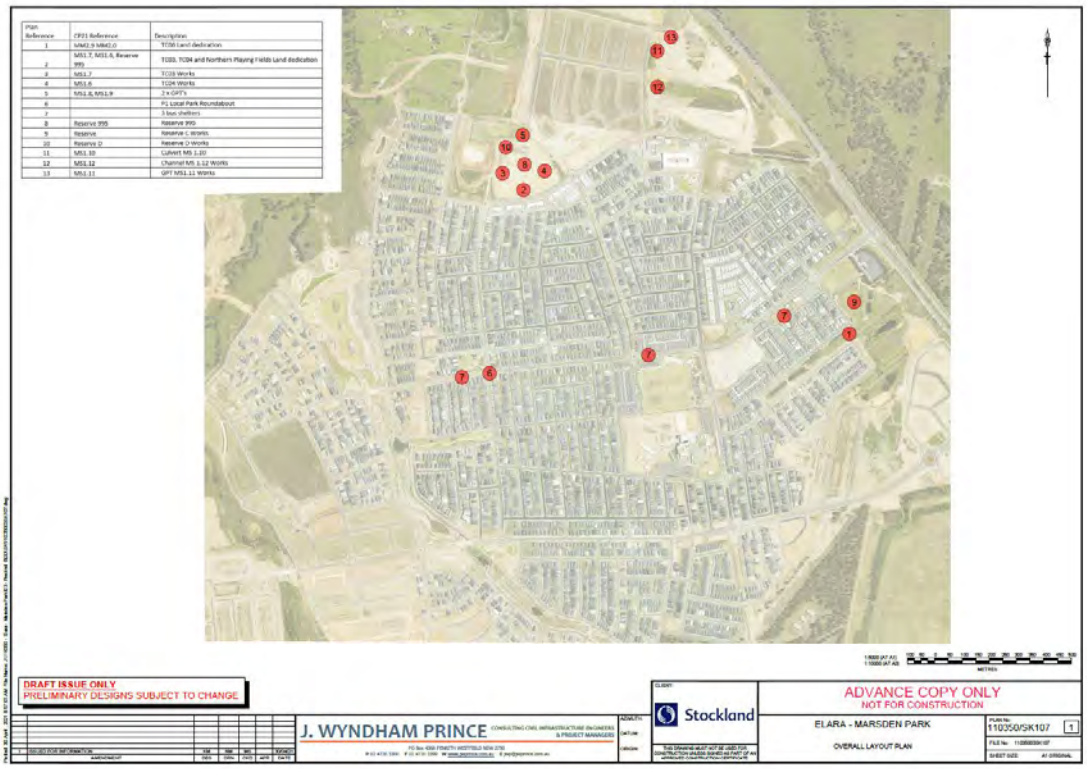
Description of Proposed Development

The Draft Deed amends the Planning Agreement so that the Planning Agreement applies to subdivision of certain land in Marsden Park into approximately 4,432 residential lots, various residual lots, super lots and the undertaking of associated works as approved by the development consents granted to the Developer, and also to the subdivision of the land into further residential lots as approved by the grant of development consent to future development applications.

Description of Development Contributions

The Draft Deed amends the Planning Agreement to include additional contribution items comprising monetary contributions, additional works to be carried out by the Developer, including water management works, gross pollutant traps, roundabout works and embellishment of reserves and the dedication of land for some of those works.

The location of the additional works are shown in the below plan.



Summary of Objectives, Nature and Effect of the Draft Deed

Objectives, Nature and Effect of Draft Deed

The Draft Deed is a deed of variation to the Planning Agreement under cl 203(5) of the *Environmental Planning and Assessment Regulation 2021*.

The objective and effect of the Draft Deed is to amend the Planning Agreement to include additional contribution items comprising monetary contributions, additional works to be carried out by the Developer, and additional land to be dedicated by the Developer to the Council.

The additional works include water management works, gross pollutant traps, roundabout works and embellishment of reserves. The location of the additional works are shown in the above plan.

The Draft Deed also:

a. amends the Planning Agreement to effect an amendment to a works-in-kind agreement entered into between the Council and the Developer for the 'Channel TC02 Work'. The change is to ensure that the value that is recognised for the 'Channel TC02 Work' is the value as determined by the Minister administering the

Environmental Planning and Assessment Act 1979 following an assessment by IPART;

b. amends the Planning Agreement to include land within Precinct 7;
c. updates the contribution values of certain open space and recreational works already included in the Planning Agreement in line with *Section 7.11 Contributions Plan No. 21 – Marsden Park*, in force at 27 May 2021 as an IPART Reviewed Contributions Plan; and
d. requires the Developer to engage another person as Principal Contractor for the Developer Works and procure the Principal Contractor to discharge the duties of a Principal Contractor under WHS Law.

Assessment of the Merits of the Draft Deed

How the Draft Deed Promotes the Public Interest

The Draft Deed requires the Developer to provide additional monetary contributions, additional works including water management works, gross pollutant traps, roundabout works and embellishment of reserves and to dedicate additional land to the Council. The Draft Deed increases the value of the Development Contributions to be provided under the Planning Agreement for the public benefit.

The Draft Deed:

- facilitates the orderly and economic use and development of land by ensuring that public facilities and infrastructure that serve the development and the wider community are provided,

- promotes good design and amenity of the built environment by requiring the public facilities and infrastructure to be constructed in accordance with the Council's engineering guides and specifications,

- provides increased opportunity for public involvement and participation in the form of public notification of the Draft Deed.

The Draft Deed promotes the public interest by promoting the objects of the Act set out in section 1.3(a), (c) and (j).

The Draft Deed also promotes the following guiding principles for local councils as set out in s8A of the *Local Government Act 1993:*

- the Draft Deed facilitates the Council's management of assets so that current and future local community needs can be met in an affordable way by requiring the Developer to construct various public facilities and infrastructure that will benefit the wider community,

- the Draft Deed is an example of Council working with others, being the Developer, to secure appropriate services for local community needs,

- the Draft Deed promotes active engagement with local communities by being required to be publicly notified in accordance with the *Environmental Planning and Assessment Regulation 2021*.

Whether the Draft Deed ***Conforms with the Authority's Capital Works*** *Program*

The Planning Agreement as amended by this Draft Deed conforms with the Council's capital works program

Whether the Draft Deed specifies that certain requirements must be complied with before a construction certificate, occupation certificate or subdivision certificate is issued

The Draft Deed does not specify that certain requirements must be complied with before a construction certificate or occupation certificate is issued.

However, the Draft Deed specifies that the payment of monetary contributions and certain works must be delivered prior to the issue of various Subdivision Certificates in the Development.

The Planning Agreement also contains other requirements that must be complied with before a construction certificate, occupation certificate or subdivision certificate may be issued which have not been amended by the Draft Deed.