REPORT

Tonkin+Taylor

River Valley Estate Stage 7D1, Lots 17, 18 & 19

Level 1 Geotechnical Inspection and Testing Authority Report

Prepared for
Maribyrnong Riverside Developments Pty Ltd
Prepared by
Tonkin & Taylor Pty Ltd
Date
February 2024
Job Number
1000780.1000.R7 v2

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www.tonkintaylor.com.au

Document control

Title: River Valley Estate Stage 7D1, Lots 17, 18 & 19					
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by:**
Feb 2024	1	Draft pending compliance test results	S. Stojcevski	D. Glover	D. Glover
Feb 2024	2	Final	S. Stojcevski	D. Glover	T. Smith

Distribution:

Maribyrnong Riverside Developments Pty Ltd	1 PDF copy
Yourland Developments Pty Ltd	1 PDF copy
Tonkin & Taylor Pty Ltd (FILE)	1 copy

Table of contents

1 Introduction

Tonkin and Taylor Pty Ltd (T+T) was engaged by Maribyrnong Riverside Developments Pty Ltd (MRD), to provide Level 1 Geotechnical Inspection and Testing Authority (GITA) services for the earthworks conducted within the Lots and the Parkland of Stage 7D of the River Valley Estate in Sunshine North.

Stage 7D of the River Valley Estate is further subdivided in five sections for the construction and reporting purposes, as follows:

- Stage 7D1, presented in this report.
- Stage 7D2, to be presented in our Report under Ref:1000780.1000.R8.
- Stage 7D3, to be presented in our Report under Ref: 1000780.1000.R9.
- Stage 7D4, to be presented in our Report under Ref: 1000780.1000.R10.
- Stage 7D Parklands, encompassing the parklands in the western parts of Stage 7D to be presented in our Report under Ref: 1000780.1000.R11.

The lots and the parklands within Stage 7D are shown in the Overall Concept Layout Plan[1] attached in Appendix D, and further explained in Section 2.1 of this report.

This report covers only two residential Lots of Stage 7D1 and one Lot within Stage 7D4, namely Lots 17 and 18 in Stage 7D1 and Lot 19 in Stage 7D4. Lot 19 will be also included in the report for 7D4 but has been reported now as the work was completed at the same time as Lots 17 and 18. No fill was placed under Level 1 GITA on the remaining Lots (Lot 2 to Lot 16) of stage 7D1.

As part of the Stage 7D, Douglas Partners Pty Ltd (DP) designed a Reinforced Earth Retaining Wall (RERW) with a rock facade along the boundaries of the lots between Stages 7D1 and 7D4, as well as along the boundaries between Stages 7D2 and 7D3. The RERW was constructed adjacent to the T+T Level 1 Fill. The construction of the retaining wall was conducted under full time supervision by DP and is documented separately (report not available at the time of writing this report). The RERW Level 1 GITA Report will form part of the overall Stage 7D lot certificates (to be issued at a later stage).

Chadwick Geotechnics Pty Ltd (Chadwick Geotechnics), a wholly owned subsidiary of T+T, was utilised for the fieldwork and laboratory testing on this project.

Level 1 GITA services as defined in AS3798-2007 “Guidelines on Earthworks for Commercial and Residential Development,” requires full time inspection and field and laboratory testing of earthworks in accordance with AS1289 “Methods of Testing Soils for Engineering Purposes”.

2 Project details

2.1 Location

The site is within an area of previous basalt quarrying activities. Stage 7D was situated on sloping ground upslope, to the west, of Stages 7A to 7C. The proposed use for the site is to establish level platforms through cut and fill for a residential subdivision.

Stage 7D1 comprised of seventeen (17) lots, titled as Lot #2 to Lot #18. However, only Lots 17 and 18 were filled as part of these Stage 7D1 works, and one lot (Lot 19) which forms part of Stage 7D4. Lots 17, 18 and 19 were located to the West of Perennial Drive as shown in the extract from the Overall Concept Layout Plan in *Figure 2.1*. An extract from Nearmap shows the aerial view of Stage 7D1 at the time of writing this report, shown in *Figure 2.2*.

[1] Overall Concept Layout Plan, Project 15006, prepared by CJ Arms, Rev P08, dated 10.11.2023.

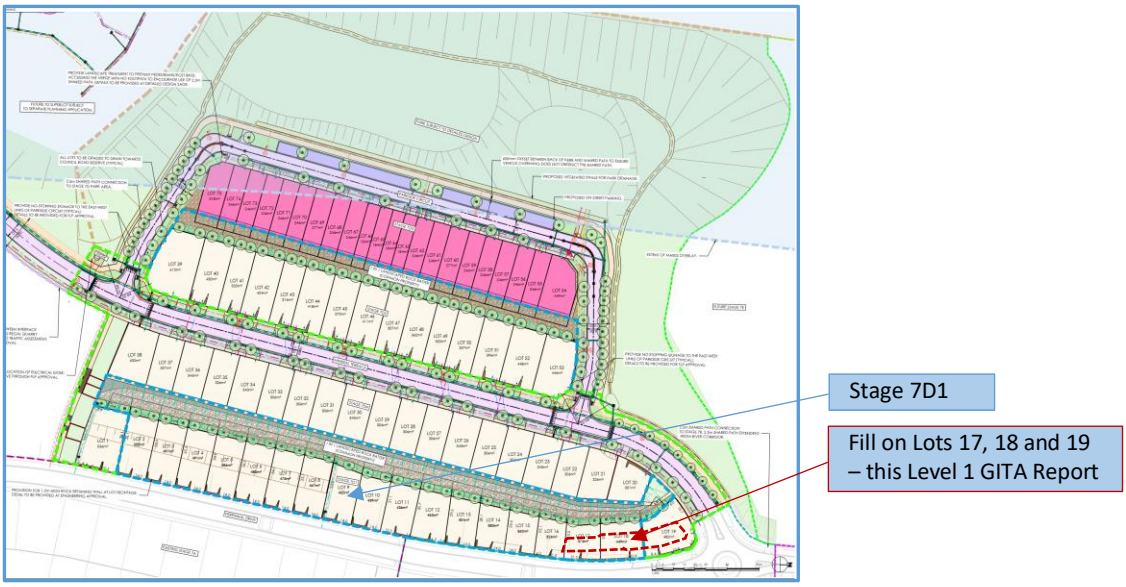

Figure 2.1: Stage 7D – extract from CJ Arms drawing 'Overall Concept Layout Plan'

Figure 2.2: Nearmap view from Stage 7D and 7D1

2.2 Specification

A specification for the bulk earthworks for Stage 7D was prepared by T+T in September 2020 (reference 1000780.1.S1.Final). The Specification was amended and updated during the construction seven (7) times and the latest version (V8) was issued in July 2022 (reference 1000780.1000.S1.V8) - referred to as "T+T Specification" herein.

The works were to be conducted in general accordance with the T+T Specification and AS 3798-2007 "Guidelines on earthworks for commercial and residential developments".

The following items were adopted as part of the project earthworks specification:

- All filling in excess of 200mm depth within the residential lots shall be undertaken to specifications satisfying the requirements of AS 3798-2007 “Guidelines on Earthworks for Commercial and Residential Development”.
- The fill soils to comply with the ‘Suitable Material’ in accordance with Section 4.4 of AS3798-2007.
- Material be sourced from on site excavations and existing stockpiles. If an alternative source is considered, it must be approved by the Superintendent.
- Unsuitable soils are considered all organic soils, topsoil, silts, or soils containing organic matter, wood, plastics, metal or other deleterious materials, and are not acceptable.
- As per T+T Specification, Type 2 Engineered Fill materials be used, with a maximum particle size of 75mm diameter and no more than 20% of the material be retained on a 37.5mm sieve.
- Subgrade to be proof rolled prior to placement of an engineered fill.
- Subgrade to be surveyed prior to placement of any fill, as noted in Section 3.4 of AS3798.
- Fill to be compacted in near horizontal layers not exceeding 250mm compacted thickness.
- Compaction to achieve a ratio of at least 95% Standard MDD (maximum dry density).
- Moisture content of the fill material is to be within ±3% of the soil’s Standard Optimum Moisture Content (SOMC).
- Frequency of testing to be in accordance with Table 8.1 of AS3798-2007.
- Finished fill surface to be surveyed prior to placement of topsoil.

2.3 Roles

The organisations and their roles are presented in Table 2.1.

Table 2.1: Roles on the project

Role	Organisation
Owner	Maribyrnong Riverside Developments Pty Ltd
Developer	Yourland Developments Pty Ltd
Bulk earthworks Geotechnical Engineer and Earthworks Specifications	Tonkin & Taylor Pty Ltd
Bulk earthworks Geotechnical Inspection and Testing Authority (GITA)	Chadwick Geotechnics Pty Ltd
Designer / Superintendent	CJ Arms Pty Ltd
Earthworks Contractor	Winslow Constructors Pty Ltd
RERW geotechnical designer	Douglas Partners Pty Ltd
RERW Level 1 GITA	Douglas Partners Pty Ltd

T+T undertook the field density testing for the bulk earthworks. The compaction control laboratory testing was conducted in the Ravenhall NATA accredited laboratory, as part of the Level 1 GITA process.

2.4 Dates on site

T+T staff were onsite for the duration of the bulk earthworks, on the days shown in Table 2.2 below.

Table 1.2: Dates on site – Level 1 GITA by T+T during bulk earthworks

Month	Date
February 2024	8 and 10

2.5 Included areas

This report is applicable to material placed as part of the bulk earthworks by Winslow on Lots 17 and 18 within Stage 7D1, and Lot 19 of Stage 7D4, as shown on the following documents:

- Site Plan drawing (1 page) prepared by CJ Arms titled 'Volume Comparison ES and FS Levels', Project No.15006, Drawing No.9902, Rev 1, dated 13.02.2024, attached in Appendix D. Extract of this drawing is shown in Figure 2.3.
- Site Plan drawing (1 page) prepared by CJ Arms titled 'Fill Layout Plan', Project No.15006, Drawing No.9901, Sheet 2 of 2, Rev 1, dated 14.02.2024, attached in Appendix D. Extract of this drawing is shown in Figure 2.4.
- Cross Sections drawings (2 pages) prepared by CJ Arms titled 'Cross Sections – Sheet 1', Project No.15006, Drawing No.9920, Rev 1, dated 24.01.2024, attached in Appendix D. Extract of the typical cross sections (in this case Section E-E') is shown in Figure 2.5.

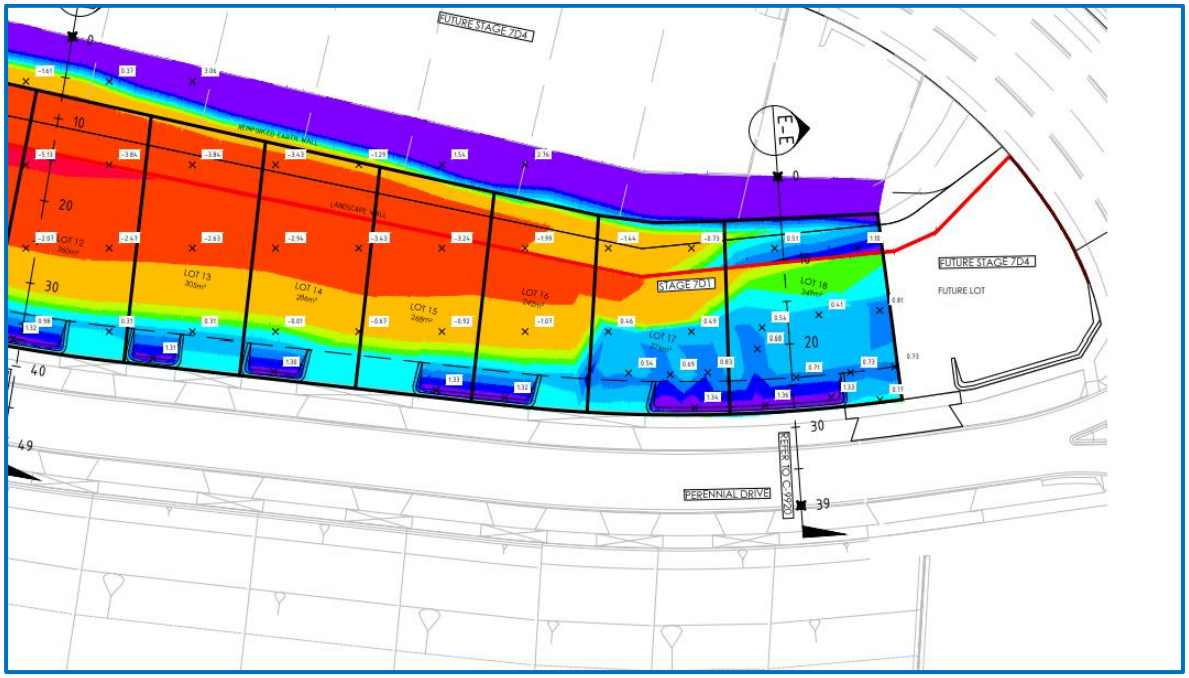

Figure 2.3.: Extract from CJ Arms drawing titled 'Volume Comparison GS and BS Levels', Project No.15006, Drawing No.9902, Rev 1.

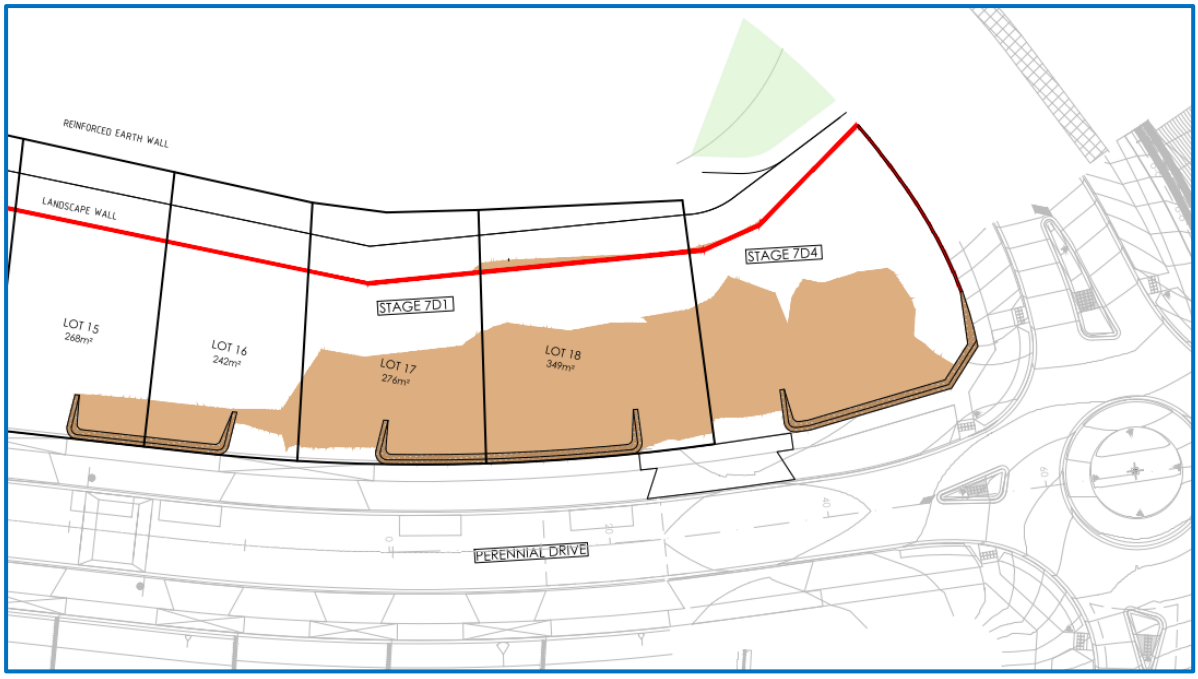

Figure 2.4: Extract from CJ Arms drawing titled 'Fill Layout Plan', Project No.15006, Drawing No.9901, Sheet 2 of 2, Rev 1

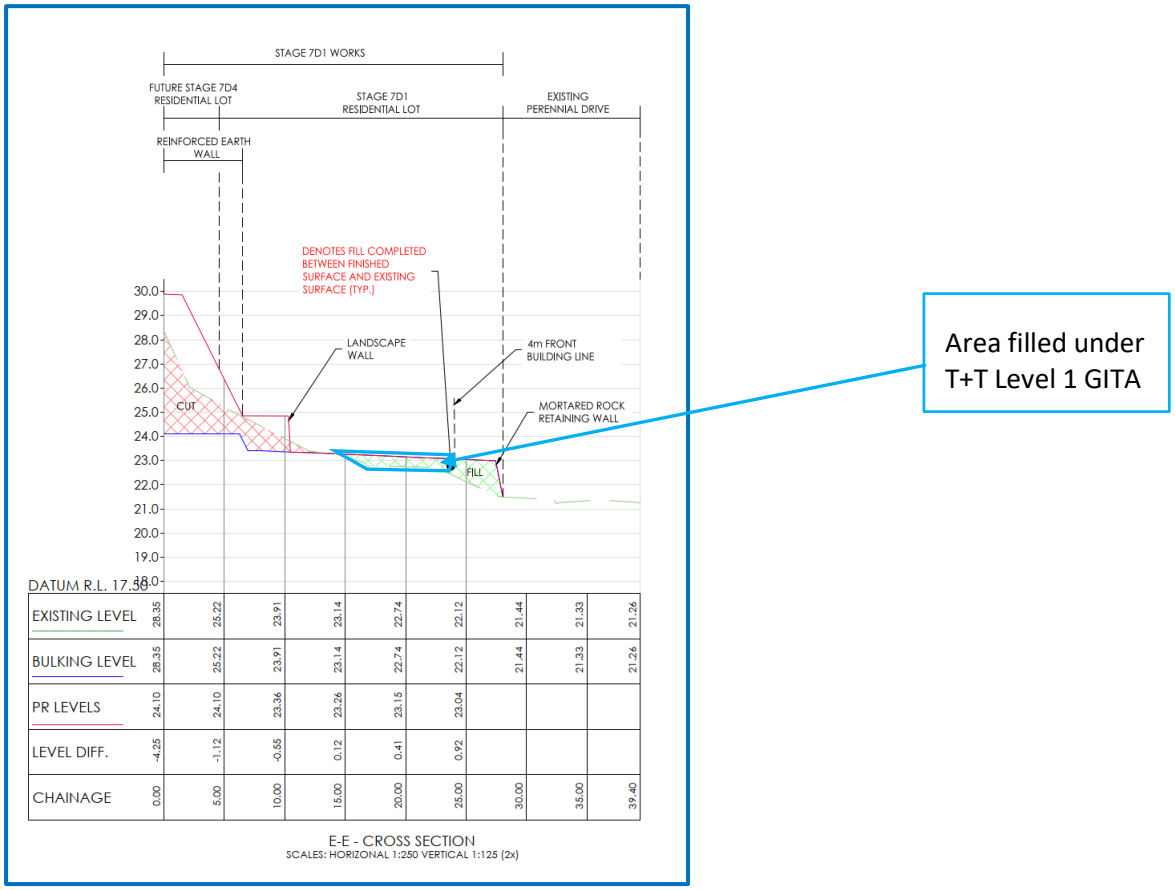

Figure 2.5: Extract from CJ Arms drawing titled 'Cross Sections", Project No.15006, Drawing No.9920, Rev 1

2.6 Excluded areas

This report does not include fill outside the general boundary of the filled areas discussed in Section 2.5, and shown on Figures 2.3, 2.4 and 2.5 of this report.

Backfill of trenches for the underground services, fill on footpaths, driveways and roads, or placement of topsoil and landscaping were not part of the scope for the works supervised by T+T.

Fill placed outside the proposed building line on Lots 17, 18 and 19, such as the fill present immediately behind the retaining wall on the eastern parts of the Lots, is not included in this report.

Any fill placed between Lots 2 and 16 is not included in this report.

The RERW fill, the façade, boulders and rocks placed on the Western side of the engineered fill on Lots 2 to 18, are not included in this report.

3 Source of material

All material was sourced from onsite. See Section 4.3.

4 Inspection and testing

The inspection and testing of the bulk earthworks have been carried out in accordance with AS3798-2007 “Guidelines on earthworks for commercial and residential developments”, with a frequency of field density tests as per Table 8.1 (explained in Section 4.6 of this report). Compaction control laboratory testing was performed in a Chadwick Geotechnics NATA accredited laboratory in accordance with AS1289 “Methods of Testing Soils for Engineering Purposes”.

4.1 Earthworks

The bulk earthworks for the project comprised of the following phases:

- Stripping of topsoil and uncontrolled fill from the proposed fill areas;
- Assessment, remediation, and proof rolling of subgrade; and,
- Placement and compaction of engineered fill.

4.2 Earthworks Plant

The contractor used the following machinery during the earthworks:

- Excavator – utilised for removing the uncontrolled fill and topsoil.
- Moxy trucks – utilised for moving the fill from the screened stockpiles to the fill pads, and for removal of the unsuitable soils.
- Pad Foot Roller – utilised for the compaction of the engineered fill.
- Water cart – used for moisture control of the engineered fill.

Photographs of the machinery used on site is shown in Photographs 4.1 to 4.4.

Photographs 4.1 to 4.4: Earthworks machinery used on site

Excavator on Stage 7D	Moxy Truck on Stage 7D
	
Pad Foot Roller on Stage 7D1	**Water Truck on Stage 7D1**
	

4.3 Fill material

Material used during the construction of the fill comprised of gravelly and silty clay won from the existing stockpiles within the adjacent Stage 7D Parklands. The materials were sorted and sieved through a 75mm screening plant and brought by moxy trucks to the fill area in Stage 7D1. The materials were assessed to meet the specified criteria for Type 2 engineering fill as per T+T Specifications.

Samples of the proposed fill were taken for geotechnical compliance testing prior to the works. The material compliance test results are summarised in Table 4.1. The laboratory test certificates are attached in **Appendix C.**

Table 4.1: Compliance tests from Type 2 material used on Stage 7D1

Sample No. / Date	Particle Size Distribution (% passing)						Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
	37.5mm	13.2mm	4.75mm	1.18mm	425µm	75µm			
MAT:S24MD-00371/1 / 07.02.2024	98	86	77	67	63	55	68	21	47

The laboratory test results indicated material is clay of high plasticity. The test results show that the clay fits the criteria for a Type 2 Engineering Fill material in accordance with the T+T Specification for this project.

Several photographs of the sieved fill materials used during construction are shown in Photographs 4.5 and 4.6 below.

Photographs 4.5 and 4.6: Fill material

Sorted materials used for the earthworks in Stage 7D1	
	

The soil was considered as 'Suitable Material' in accordance with Section 4.4 of the AS3798-2007.

The fill material was not tested for classification of 'Fill Material' as defined in EPA Publication IWRG621.

Any observed organic or deleterious matter including any oversize cobbles or boulders were removed from the tested areas during the fill placement.

4.4 Subgrade Assessment / Proof Roll / Benching

The subgrade of Lots 17, 18 and 19 was assessed during the period Level 1 field personnel were on site on 8 February 2024. The subgrade assessment was conducted following the removal of the uncontrolled fill that was present on site.

Once the subgrade area was stripped of the fill, the approved surface comprised natural clay of medium to high plasticity with frequent cobbles and gravels. Some of the subgrade was excavated down to highly to slightly weathered rock with clay seams. All loose gravel and cobbles were removed from the assessed subgrade.

The subgrade inspections were performed in accordance with the Level 1 guidelines presented in AS 3798–2007 Section 5.5, and in accordance with Section 8.5 of the T+T Specification. No soft spots or deflections were encountered during the inspections and proof rolling of the area. Proof rolling was conducted using a loaded moxy truck by conducting a minimum of 2 passes in all stripped areas.

Photographs of the proof roll during fill construction are shown in Photographs 4.7 and 4.8.

Photograph 4.7 and 4.8: Subgrade proof roll on Lots 17, 18 and 19

Exposed subgrade – Looking from Lot 17 to North towards Lots 18 and 19	Proof Roll with loaded moxy truck
	

4.5 Engineered fill construction

All fill material was brought by moxy truck from the sieved stockpiles in Stage 7D. The fill was spread and compacted with a pad foot roller. A water cart was present onsite during the works for moisture conditioning of the materials.

All fill material was placed in lift sequences comprising horizontal layers not exceeding 250mm thickness after compaction. The Level 1 personnel verified that the surface of the stripped area, and that of additional lifts, was thoroughly scarified and moisture conditioned prior to placement of additional layers to prevent delamination at the layer interface. Once the placed fill was approved, the layer was compacted accordingly.

Level 1 personnel were on site on a fulltime basis during the placement, moisture conditioning, compaction and testing of the fill on the dates noted in Table 2 of this report.

Several photographs of the engineered fill construction are shown in Photographs 4.9 and 4.10 below.

Photographs 4.9 and 4.10: Photographs showing the fill construction on Lots 18 and 19

Compacting fill on Lots 17, 18 and 19	Moisture conditioning fill placed on Lots 17, 18 and 19
	

4.6 Density Testing

Field density and moisture content testing was undertaken progressively during construction on the compacted fill using a calibrated portable density and moisture gauge in accordance with AS 1289.5.8.1. The HILF rapid compaction test was used for peak converted wet density determinations in accordance with AS 1289.5.7.1. Test locations were recorded using a handheld GPS unit. A site plan showing the field density test locations is provided in **Appendix A**.

Testing was undertaken under the frequencies listed below, subject to the area and volume worked on the day of testing:

- 1 test per layer per 1,000m² or 1 test per 200m³ distributed reasonably evenly or 1 test per residential lot - whichever requires the most tests in accordance with Type 2 Earthworks (small scale operations) as defined in Table 8.1 of the AS 3798-2007;
- 1 test per layer per 500m² or 1 test per 100m³ distributed reasonably evenly or 3 tests per visit - whichever requires the most tests in accordance with Type 3 Earthworks (concentrated scale operations) as defined in Table 8.1 of the AS 3798-2007; and

A total of 5 (five) tests were performed during the filling process. All tests returned a passing density and moisture test result.

A summary table of HILF density tests is provided in **Appendix B** and the laboratory test reports are provided in **Appendix C**.

Two photographs below show examples of the density tests conducted during the fill construction.

Photographs 4.11 and 4.12: Field Density testing

Field Density Test on 10.02.2024	Field Density Test on 10.02.2024
	

4.7 Fill thickness analyses

CJ Arms provided a copy of the site survey drawing in a heat map format, showing the fill thickness placed on the site. The drawing is presented in Appendix D under reference 'Volume Comparison ES and FS Levels', Project No.15006, Drawing No.9902, Rev 1, dated 13.02.2024.

The data presented in the CJ Arms drawings has been analysed and compared against our Level 1 GITA daily records. A summary of the analysis is provided in Table 4.2. Random points were selected for the analysis, and it is assumed the fill between the analysed survey points is of a similar thickness.

Table 4.2: Fill data analyses on Lots 17, 18 and 19

Lot #	Area	Fill thickness shown on drawings (mm)	No. of layers placed under Level 1 GITA	Average layer thickness of ≤250mm	Meet Project Specifications
17	Approx 1m to West of Eastern Building Line Perimeter	300	3	Yes	Yes
18		750	3	Yes	Yes
19		700	3	Yes	Yes

Note 1: Specified layer thickness of 250mm was proposed in the Technical Specifications for this project. After compaction, each layer should have resulted in less than 250mm compacted thickness – as shown in Table 5.

Note 2: Engineered fill was placed within the proposed building line perimeter, hence analyses are conducted to the West of the building line. Fill placed to the East of the building line is uncontrolled and excluded from these analyses.

5 Conclusion

On the basis of our inspections and after considering all test results relating to the project, it is our opinion, so far as it is able to be determined, that:

- The materials used by the earthworks contractor met the geotechnical property requirements of the specification.
- The sourced fill was considered to be clean and suitable for use at the site.
- The fill material placed was tested at a suitable frequency in accordance with AS 3798-2007- Table 8.1 and the results indicate the compacted clay achieved the density requirement of the Specification.
- Given the consistent construction practices followed by the earthworks contractor and as witnessed by T+T, combined with the satisfactory verification of test results achieved, it is inferred that areas of the site between test locations were performed to the same standard as those areas that have been tested.
- Based on observations made by Chadwick Geotechnics Level 1 personal and the results of field and laboratory tests, we consider that the engineered fill within Stage 7D1 (Lots 17 and 18) and Lot 19 of Stage 7D4, as noted in Section 2.4) and indicated to the levels indicated in the survey drawing in **Appendix D**, constructed by Winslow, as far as we have been able to reasonably determine, have been placed in general accordance with the intent of the specification.
- It is our opinion that the earthworks undertaken have been performed in accordance with the requirements of Section 8.2 – Level 1 Inspection and Testing - AS3798-2007 Guidelines on Earthworks for Commercial and Residential Developments.

6 Applicability

This report has been prepared for the exclusive use of our client Maribyrnong Riverside Developments Pty Ltd, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

This report is based on the nature of the project and the prevailing conditions between 8 and 10 February 2024. No responsibility or liability will be accepted in respect of the use of this report where there has been a change in the nature of the project or the conditions on site that may alter or affect the conclusions of this report.

Tonkin & Taylor Pty Ltd
Environmental and Engineering Consultants

Report prepared by:

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Sotir Stojcevski
Earthworks Engineering Team Leader

Reviewed by:

.....

David Glover (PE0005088)
Principal Geotechnical Engineer

Authorised for Tonkin & Taylor Pty Ltd by:

.....

Trevor Smith
Project Director

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Appendix A Test location plan

LEGEND

14 LEVEL ONE GITA TEST LOCATION

NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD IMAGERY DATE: 11/01/2023.
2. BASE PLAN PROVIDED BY YOURLAND DEVELOPMENTS/CJ ARMS. PROJECT NO. 15006, ZONE 7D, DWG NO. 0500, REVISION P08. DATE RECEIVED: 10/01/2024.

CHADWICK GEOTECHNICS
www.chadwickgeotechnics.com.au

PROJECT No.	1003809.7000.7D1	
DESIGNED	SOST	Feb.24
DRAWN	KMJA	Feb.24
CHECKED	SOST	Feb.24
S. STOJCEVSKI		15.02.2024
APPROVED		DATE

CLIENT **YOURLAND/CJ ARMS**
PROJECT **RIVER VALLEY ESTATE - STAGE 7D1**
TITLE LEVEL ONE GITA TESTING
FIELD DENSITY TEST LOCATION PLAN
SCALE (A3) 1:200 FIG No. 1003809.7000.7D1-F01 REV 1

Appendix B Hilf test summary tables

CHADWICK GEOTECHNICS

Hilf Summary Table

1003809 - RIVER VALLEY 7D1

Chadwick Geotechnics
25 Metcalf Street
Dandenong South VIC 3175
Tel : (03) 8796 7900
Fax: (03) 8796 7944

Think Act Be Safe

Report No	Sample No	Test No.	Retest of	Date	Lot # / Area	Location [E]	Location [N]	Layer (Elevation)	HILF test	Moisture Variation	Pass / Fail	Remarks
HDR_W24MD00122	S24MD-00483	135		10/02/2024	Lots 17,18, 19	310341	5819096	L1 FSL -500mm	97.5	OMC	Pass	
HDR_W24MD00124	S24MD-00485	136		10/02/2024	Lots 17,18, 19	310341	5819100	L2 FSL - 250mm	99	0.5 wet	Pass	
HDR_W24MD00124	S24MD-00486	137		10/02/2024	Lots 17,18, 19	310339	5819117	L2 FSL - 250mm	98.5	0.5 wet	Pass	
HDR_W24MD00124	S24MD-00487	138		10/02/2024	Lots 17,18, 19	310340	5819102	L3 FSL	96.5	OMC	Pass	
HDR_W24MD00124	S24MD-00488	139		10/02/2024	Lots 17,18, 19	310331	5819127	L3 FSL	100.5	OMC	Pass	
		end										

Appendix C NATA laboratory test reports

- **Classification test reports**
- **Density / moisture test reports**

Western Region Laboratory
ACN 143 009 330
Factory 1/7 Katherine Drive
Ravenhall VIC 3023

Report No: MAT:S24MD-00371/1
Issue No: 1

Material Test Report

Client: Tonkin & Taylor (Aus) Pty Limited
Address: Level 3, 99 Coventry Street
SOUTH MELBOURNE VIC 3006
Project: River Valley Stage 7D
Project No.: 1003809.7000
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 23249
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 21/02/2024

Sample Details

Location	Stage 7D Park
Sample Location	E 310125, N 5818947, Stockpile
Field Sample ID	1
Date Sampled	7/02/2024
Time Sampled	11:32
Source	Site Derived
Material	Gravelly Clay
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.2
Sample ID	S24MD-00371

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	14.8	
Date Tested		12/02/2024	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	17.5	
Mould Length (mm)		250	
Crumbling		No	
Curling		Yes	
Cracking		Yes	
Liquid Limit (%)	AS 1289.3.1.2	68	
Plastic Limit (%)	AS 1289.3.2.1	21	
Plasticity Index (%)	AS 1289.3.3.1	47	
Date Tested		20/02/2024	

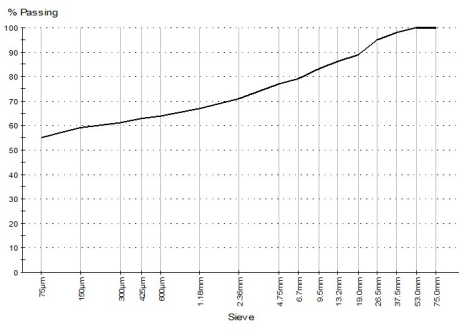
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 20/02/2024

Note: Sample Washed

Sieve Size	% Passing	Limits
75.0mm	100	
53.0mm	100	
37.5mm	98	
26.5mm	95	
19.0mm	89	
13.2mm	86	
9.5mm	83	
6.7mm	79	
4.75mm	77	
2.36mm	71	
1.18mm	67	
600µm	64	
425µm	63	
300µm	61	
150µm	59	
75µm	55	

Chart



Comments

N/A

Western Region Laboratory
ACN 143 009 330
Factory 1/7 Katherine Drive
Ravenhall VIC 3023

Report No: MDD:S24MD-00371
Issue No: 1

Maximum Dry Density Report

Client: Tonkin & Taylor (Aus) Pty Limited
Address: Level 3, 99 Coventry Street
SOUTH MELBOURNE VIC 3006
Project: River Valley Stage 7D
Project No.: 1003809.7000
Order No.: **CG Request No.:**
TRN: **Lot No.:**

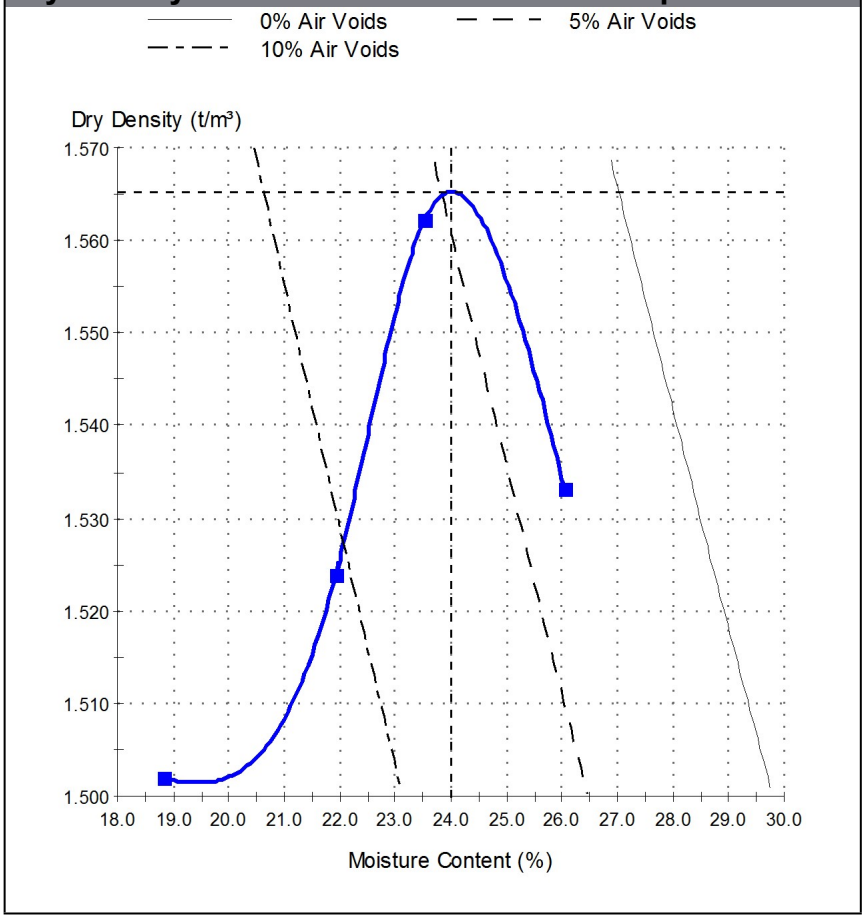
Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 23249
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 21/02/2024

Sample Details

Location: Stage 7D Park
Sample ID: S24MD-00371
Sampling Method: AS1289.1.2.1 Clause 6.2
Source: Site Derived
Specification: AS Grading
Location: E 310125, N 5818947, Stockpile
Date Tested: 12/02/2024
Date Sampled: 7/02/2024
Material: Gravelly Clay

Dry Density - Moisture Content Relationship



Test Results

	AS 1289.5.1.1
Standard MDD (t/m³):	**1.57**
Standard OMC (%):	**24.0**
Retained Sieve (mm):	19.0
Oversize Material (%):	10
Curing Time (h):	100
LL Method:	Visual / Tactile

Comments

Western Region Laboratory
ACN 143 009 330
Factory 1/7 Katherine Drive
Ravenhall VIC 3023

Report No: HDR:W24MD00122
Issue No: 1

HILF Density Ratio Report

Client: Tonkin & Taylor (Aus) Pty Limited
Address: Level 3, 99 Coventry Street
SOUTH MELBOURNE VIC 3006
Project: River Valley Stage 7D
Project No.: 1003809.7000
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 23249
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 14/02/2024

Sample Details

Location:	Stage 7D
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Site Derived
Material:	Gravelly Clay

Sample Data

Sample ID	S24MD-00483					
Field Sample ID	1					
Client Sample ID	135					
Date Tested	10/02/2024					
Time Tested	09:40					
E:	310341					
N:	5819096					
Layer::	L1 (RL 23.064 FSL -500mm)					
Lot:	17					
Field and Laboratory Data						
Depth of Test (mm)	125					
Depth of Layer (mm)	150					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	3					
Field Moisture Content (%)	29.0					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.85					
Field Dry Density (t/m³)	1.44					
Peak Converted Wet Density (t/m³)	1.91					
Optimum Moisture Content (%)	29.0					
Compactive Effort	Standard					
Moisture Ratio (%)	100.5					
Moisture Variation (%)	0.0					
Hilf Density Ratio (%)	**97.5**					

Comments

Western Region Laboratory
ACN 143 009 330
Factory 1/7 Katherine Drive
Ravenhall VIC 3023

Report No: HDR:W24MD00124
Issue No: 1

HILF Density Ratio Report

Client: Tonkin & Taylor (Aus) Pty Limited
Address: Level 3, 99 Coventry Street
SOUTH MELBOURNE VIC 3006
Project: River Valley Stage 7D
Project No.: 1003809.7000
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 23249
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 15/02/2024

Sample Details

Location:	Stage 7D
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Site Derived
Material:	Gravelly Clay

Sample Data

Sample ID	S24MD-00485	S24MD-00486	S24MD-00487	S24MD-00488		
Field Sample ID	1	2	3	4		
Client Sample ID	136	137	138	139		
Date Tested	10/02/2024	10/02/2024	10/02/2024	10/02/2024		
Time Tested	10:41	10:50	12:50	13:00		
E:	310341	310339	310340	310331		
N:	5819100	5819117	5819102	5819127		
Layer:	L2 (RL 23.132 FSL -250mm)	L2 (RL 23.109 FSL -250mm)	L3 (RL 23.180 FSL)	L3 (RL 23.386 FSL)		
Lot:	19	18	18	19		
Field and Laboratory Data						
Depth of Test (mm)	225	225	225	225		
Depth of Layer (mm)	250	250	250	250		
AS Sieve Size (mm)	19.0	19.0	19.0	19.0		
Oversize Wet (%)	2	7	4	8		
Field Moisture Content (%)	32.9	32.8	29.9	31.5		
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1		
Field Wet Density (t/m³)	1.85	1.87	1.82	1.92		
Field Dry Density (t/m³)	1.39	1.41	1.40	1.46		
Peak Converted Wet Density (t/m³)	1.87	1.90	1.89	1.91		
Optimum Moisture Content (%)	32.5	32.0	30.0	31.5		
Compactive Effort	Standard	Standard	Standard	Standard		
Moisture Ratio (%)	101.0	102.0	99.5	100.5		
Moisture Variation (%)	0.5 wet	0.5 wet	0.0	0.0		
Hilf Density Ratio (%)	**99.0**	**98.5**	**96.5**	**100.5**		

Comments

Appendix D Client supplied drawings

- **Overall concept plan**
- **Fill layout plan**
- **Bulk earthworks heat map**
- **Cross sections**

File Reference 15006-CJA-7D-00-DR-C-0500 - STAGE 7D - OVERALL PLANNING LAYOUT_recover000.dwg

FUTURE 7D SUPERLOT SUBJECT TO SEPARATE PLANNING APPLICATION.

PROPOSED VEGETATED SWALE FOR PARK DRAINAGE.

PARK SUBJECT TO DETAILED DESIGN

2.5m SHARED PATH CONNECTION TO STAGE 7D PARK AREA.

PARKSIDE CIRCUIT

PROPOSED ON STREET PARKING.

STAGE 7D3

EXTENT OF MAE02 OVERLAY.

STAGE 8

KIOSK

1 IN 1 REINFORCED EARTH WALL

ESCARPMENT LANE

STAGE 7D2

PROVIDE NO PARKING SIGNAGE TO LANEWAY (TYP)

FUTURE STAGE 7E

3.0m SHARED PATH CONNECTION TO STAGE 7D PARK AREA.

PROVISION OF VEHICULAR BARRIER BETWEEN INTERFACE OF MINERAL TERRACE AND THE EXISTING REGAL QUARRY SUBJECT TO FURTHER ENGINEERING AND TRAFFIC ASSESSMENT. DETAILS TO BE RESOLVED FOR FLP APPROVAL.

INDICATIVE LOCATION OF ELECTRICAL KIOSK. TO BE RESOLVE THROUGH FLP APPROVAL.

MINERAL TERRACE

STAGE 7D4

STAGE 7D1

2.5m SHARED PATH CONNECTION TO STAGE 7B, 2.5m SHARED PATH EXTENDING FROM RIVER CORRIDOR.

PROVISION FOR 1.5m HIGH ROCK RETAINING WALL AT LOT FRONTAGE. DETAIL TO BE PROVIDED AT ENGINEERING APPROVAL.

PERENNIAL DRIVE

EXISTING STAGE 7A

1:500

7D STAGE SEQUENCING	
STAGE	LOTS YIELD
7D-1	17
7D-4	21
7D-2	30
7D-3	22
TOTAL	90

STAGE 7D - DEVELOPMENT YIELD LAND BUDGET

DESCRIPTION	AREA (Ha)	% OF TOTAL AREA
7D - TOTAL AREA	7.18	
ROAD INFRASTRUCTURE		
7D2 LOCAL ROAD (ACCESS STREET)	0.28	3.9%
7D3 LOCAL ROAD (ACCESS STREET)	0.49	6.8%
7D4 LOCAL ROAD (ACCESS STREET)	0.62	8.6%
SUBTOTAL	1.38	19.2%
RESIDENTIAL		
7D1 CONVENTIONAL RESIDENTIAL	0.75	10.4%
7D4 CONVENTIONAL RESIDENTIAL	0.92	12.8%
7D2 MEDIUM DENSITY RESIDENTIAL	0.54	7.5%
7D3 MEDIUM DENSITY RESIDENTIAL	0.55	7.7%
COUNCIL RESERVE LOT	0.09	1.2%
PARKLAND RESERVE	2.96	41.2%
SUBTOTAL	5.80	80.8%
TOTAL 7D LOT AREA (Ha)	2.76	
TOTAL NUMBER OF LOTS	90	
AVERAGE LOT SIZE (m^2)	306.4	

Revision	Date	Reason	Drawn	Checked
P08	10.11.23	LATEST STAGE 7D CONCEPT LAYOUT	RP	TS
P07	28.09.23	LATEST STAGE 7D CONCEPT LAYOUT	RP	TS
P06	05.04.23	LATEST STAGE 7D CONCEPT LAYOUT	TS	VR
P05	11.01.23	LATEST STAGE 7D CONCEPT LAYOUT	TS	VR
P04	07.12.22	LATEST STAGE 7D CONCEPT LAYOUT	TS	VR
P03	25.10.22	LATEST STAGE 7D CONCEPT LAYOUT	TS	VR
P02	17.10.22	LATEST STAGE 7D CONCEPT LAYOUT	TS	VR
P01	25.01.22	LATEST STAGE 7D CONCEPT LAYOUT	JSS	VR

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Dial before you dig. BEWARE OF UNDERGROUND SERVICES. The location of underground services are approximate only and their exact position should be proven on site. No guarantee is given that existing services are shown.

NOTE:
1. ANY CHANGES NECESSITATED BY THE FLP FOR EACH STAGE MUST BE REFLECTED WHERE RELEVANT ON PLANS ENDORSED UNDER THIS PERMIT.
2. SERVICE LOCATIONS ARE INDICATIVE FOR THE PURPOSE OF PLANNING ASSESSMENT. ALIGNMENT TO BE RESOLVED AT DETAILED DESIGN STAGE.

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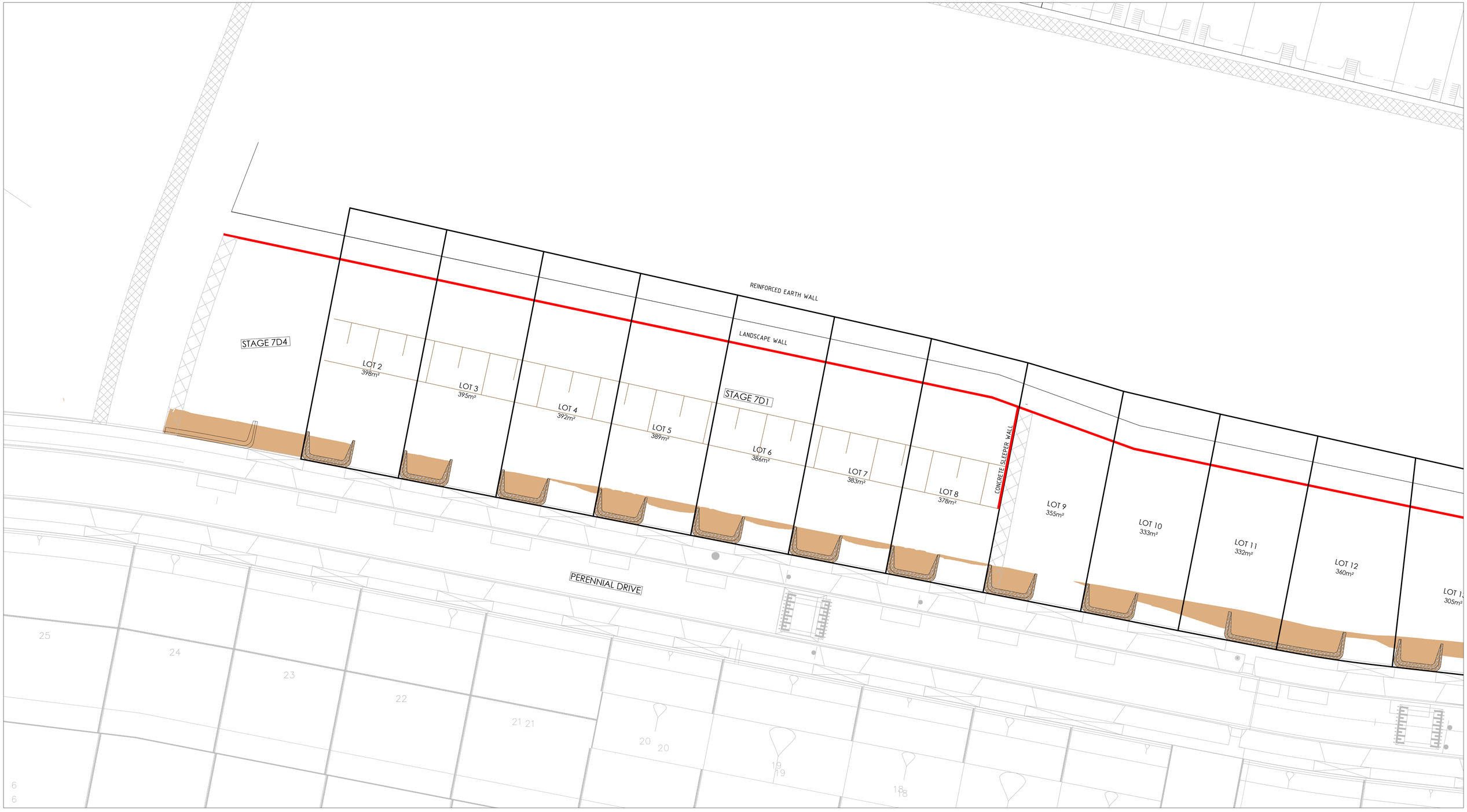
PLANNING PERMIT

MELBOURNE
T: (03) 9280 2800 | E: info@cjarms.com | W: www.cjarms.com

Project: RIVER VALLEY - STAGE 7D
Drawing Title: OVERALL CONCEPT LAYOUT PLAN
Client: YOURLAND
Purpose of Issue: FOR PLANNING PERMIT
Drawn By: RP | Checked By: TS | Drawn Scale: 1:500 @ A1 | Date of First Issue: 25.01.22

Project Number	Origin	Zone	Level	File Type	Role	Number	Revision
15006	CJA	7D	PP	DR	C	0500	P08

A1 File Reference 15006-CJA-7D1-00-DR-C-9900 - FILL LAYOUT PLAN.dwg



LEGEND

- FILL (+300mm)
- RETAINING WALL (CONCRETE SLEEPER)
- RETAINING WALL (ROCKWORK)

DRAWING NOTES:

- THIS PLAN DETAILS AREAS IN WHICH 300mm OR GREATER OF FILL WILL BE PLACED ON TOP OF THE NATURAL SURFACE OF THE LAND WITHIN THE SUBDIVISION AS A RESULT OF THE PROPOSED WORKS.
- THIS PLAN DOES NOT DETAIL ANY OTHER FILL MATERIAL THAT MAY HAVE BEEN PLACED WITHIN THE SUBDIVISION PRIOR TO THE CIVIL WORKS BEING UNDERTAKEN.
- IRRESPECTIVE OF THE DEPTH OF FILL DETAILED ON THIS PLAN, FOUNDATIONS MUST BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS AND WILL TAKE INTO ACCOUNT THE SOIL CLASSIFICATION AND SOIL REPORT PREPARED FOR EACH INDIVIDUAL LOT.
- THE EXTENT AND DEPTH OF FILL SHOWN ON THIS PLAN WILL BE CONFIRMED ON-SITE BY A GEOTECHNICAL INVESTIGATION BY A REGISTERED AND EXPERIENCED GEOTECHNCIAL ENGINEER

0 1 2.5 5 7.5 10 15 20 25m
1:250

Revision	Date	Reason	Drawn	Checked
I	14.02.24	ISSUED FOR AS-CONSTRUCTED	TS	VR
0	09.12.22	ISSUED FOR CONSTRUCTION	TS	VR

Disclaimer:
1. This drawing is copyright of CJ Arms. It must not be copied or reproduced without written consent from the owner.
2. Do not scale from this drawing. Only figured dimensions are to be taken from this drawing.
3. All contractors must visit site and be responsible for taking and checking all dimensions related to the works shown on the drawing prior to fabrication or setting out.

Note for Contractors
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ISSUED FOR AS-CONSTRUCTED

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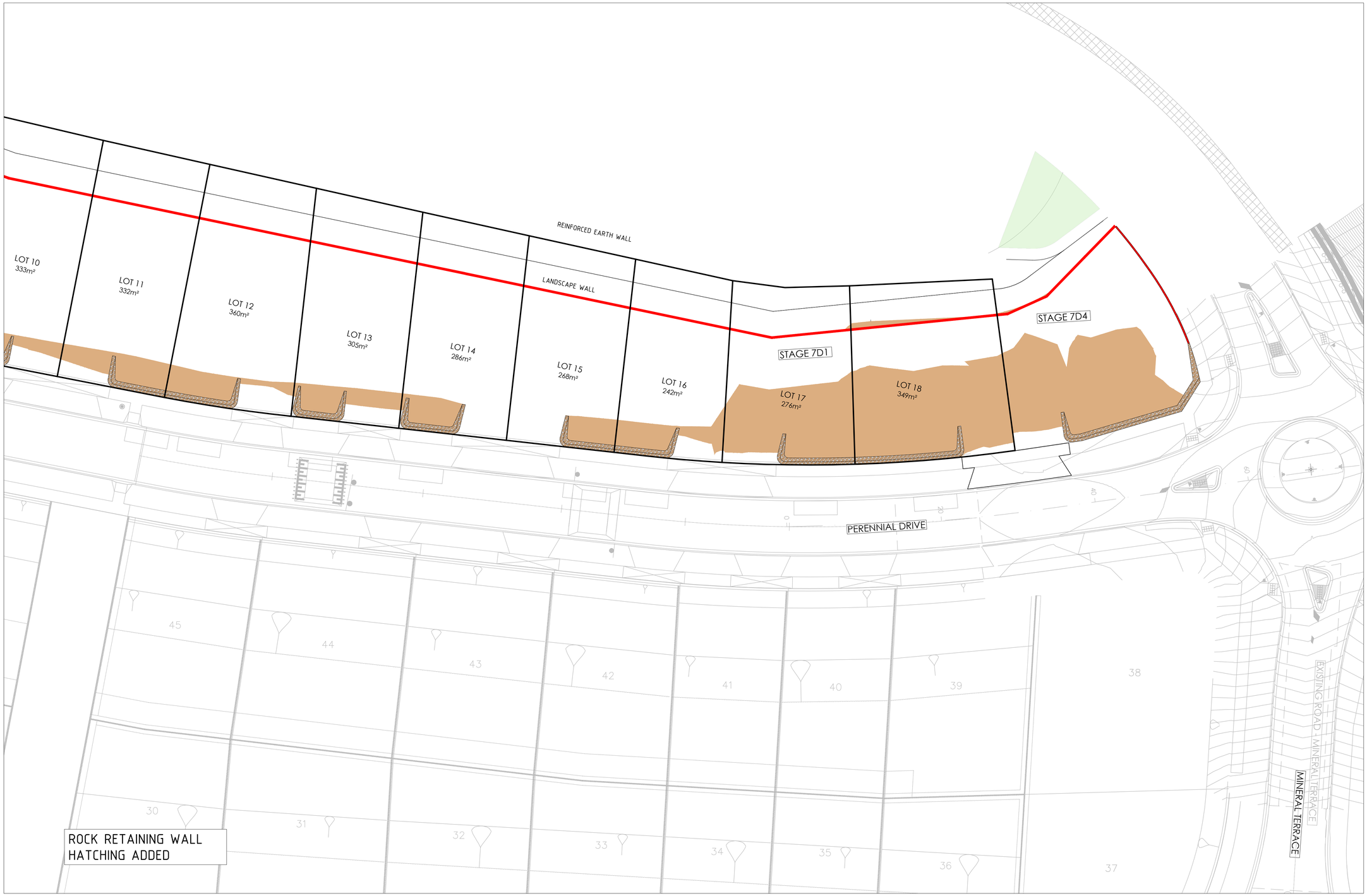
CIVIL SITEWORKS
MELBOURNE
T : (03) 9285 2800 | E : info@cjarms.com | W : www.cjarms.com

Project: RIVER VALLEY - STAGE 7D1
Client: YOURLAND
Purpose of Issue: ISSUED FOR AS-CONSTRUCTED
Drawing Title: FILL LAYOUT PLAN (SHEET 1 OF 2)

Drawn By	Checked By	Drawn Scale	Date of First Issue
TS	VR	1:250 @ A1	09.12.22

Project Number	Origin	Zone	Level	File Type	Role	Number	Revision
15006	CJA	7D1	00	DWG	C	9900	1

A1 File Reference 15006-CJA-7D1-00-DR-C-9900 - FILL LAYOUT PLAN.dwg



LEGEND

- FILL (+300mm)
- RETAINING WALL (CONCRETE SLEEPER)
- RETAINING WALL (ROCKWORK)

DRAWING NOTES:

- THIS PLAN DETAILS AREAS IN WHICH 300mm OR GREATER OF FILL WILL BE PLACED ON TOP OF THE NATURAL SURFACE OF THE LAND WITHIN THE SUBDIVISION AS A RESULT OF THE PROPOSED WORKS.
- THIS PLAN DOES NOT DETAIL ANY OTHER FILL MATERIAL THAT MAY HAVE BEEN PLACED WITHIN THE SUBDIVISION PRIOR TO THE CIVIL WORKS BEING UNDERTAKEN.
- IRRESPECTIVE OF THE DEPTH OF FILL DETAILED ON THIS PLAN, FOUNDATIONS MUST BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS AND WILL TAKE INTO ACCOUNT THE SOIL CLASSIFICATION AND SOIL REPORT PREPARED FOR EACH INDIVIDUAL LOT.
- THE EXTENT AND DEPTH OF FILL SHOWN ON THIS PLAN WILL BE CONFIRMED ON-SITE BY A GEOTECHNICAL INVESTIGATION BY A REGISTERED AND EXPERIENCED GEOTECHNCIAL ENGINEER

Revision	Date	Reason	Drawn	Checked
1	14.02.24	ISSUED FOR AS-CONSTRUCTED	TS	VR
0	09.12.22	ISSUED FOR CONSTRUCTION	TS	VR

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ISSUED FOR AS-CONSTRUCTED

0 1 2.5 5 7.5 10 15 20 25m
1:250

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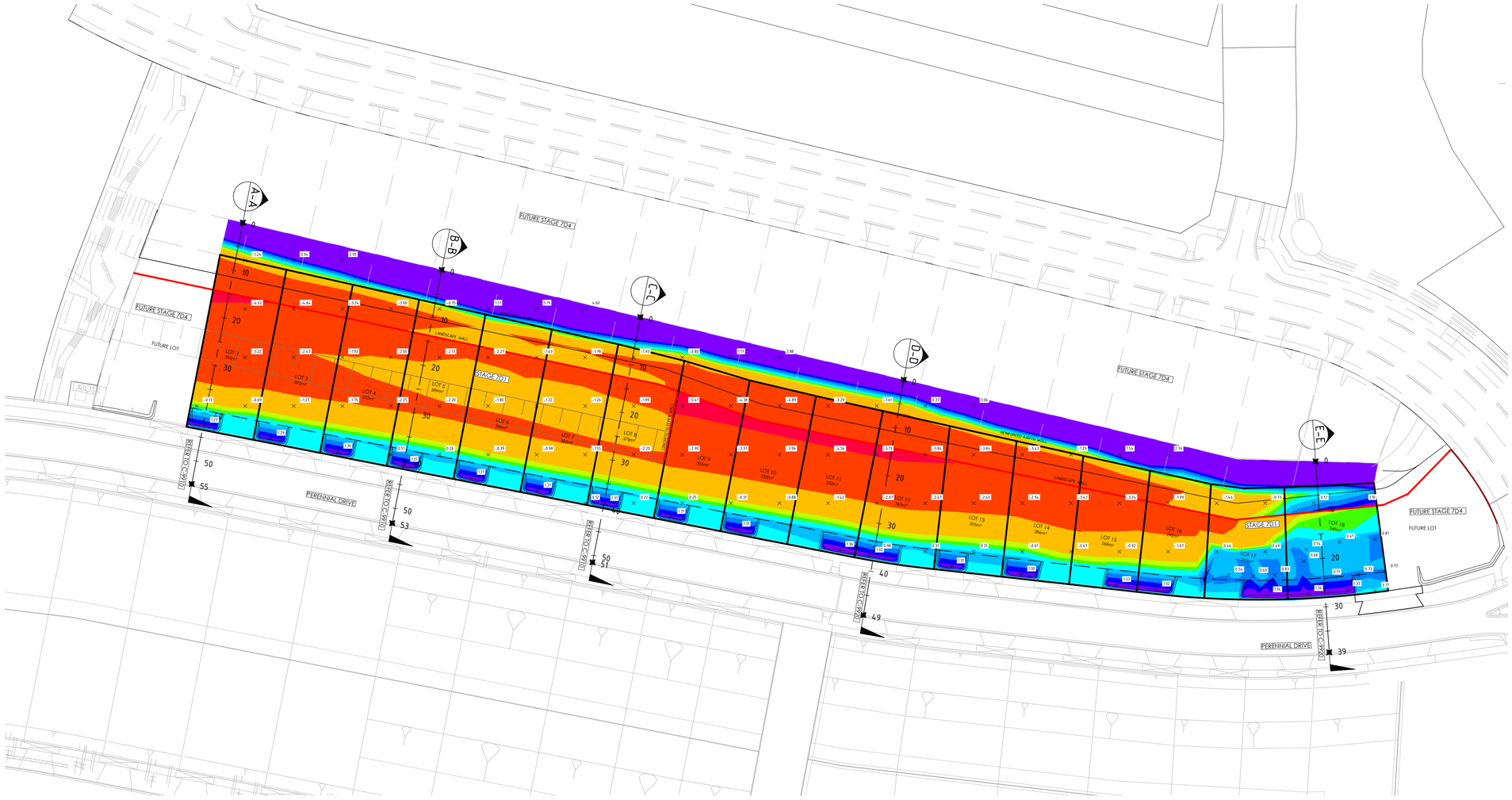
Project: RIVER VALLEY - STAGE 7D1
Client: YOURLAND
Drawing Title: FILL LAYOUT PLAN (SHEET 2 OF 2)
Purpose of Issue: ISSUED FOR AS-CONSTRUCTED
Drawn By: TS | Checked By: VR | Drawn Scale: 1:250 @ A1 | Date of First Issue: 09.12.22

Project Number	Origin	Zone	Level	File Type	Role	Number	Revision
15006	CJA	7D1	00	DWG	C	9901	1



VOLUMETRIC ANALYSIS				
NUMBER	COLOUR RANGE	MIN ELEVATION (m)	MAX ELEVATION (m)	2D AREA (m²)
1		-6.080	-5.000	156.0
2		-5.000	-2.000	3090.3
3		-2.000	-0.500	2243.2
4		-0.500	-0.200	316.4
5		-0.200	0.000	253.5
6		0.000	0.300	740.5
7		0.300	0.600	553.4
8		0.600	0.900	337.9
9		0.900	1.200	245.4
10		1.200	5.690	1178.2

0 2 5 10 15 20 25 35 50m
1:500

Revision	Date	Reason	Drawn	Checked
1	13.02.2024	ISSUED FOR CONSTRUCTION	NH	TS
0	12.01.2024	ISSUED FOR CONSTRUCTION	NH	TS

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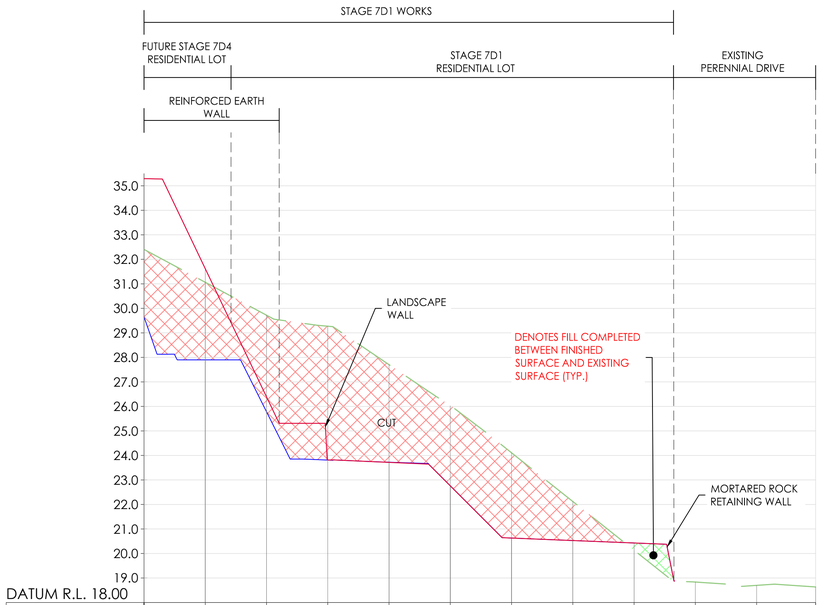
T : (03) 9285 2800 | E : info@cjarms.com | W : www.cjarms.com

Project: RIVER VALLEY - STAGE 7D1
Drawing Title: VOLUME COMPARISON ES AND FS LEVELS
Client: YOURLAND
Purpose of Issue: ISSUED FOR CONSTRUCTION

Drawn By	Checked By	Drawn Scale	Date of First Issue
NH	TS	1:250 @ A1	22.01.2024

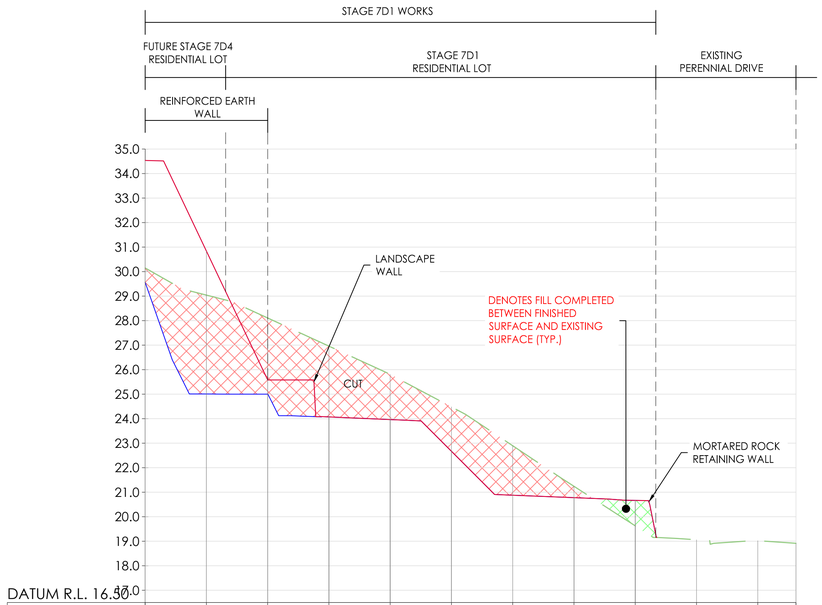
Project Number	Origin	Zone	Level	File Type	Role	Number	Revision
15006	CJA	7D1	00	DR	C	9902	1



DATUM R.L. 18.00

BULKING LEVEL	32.40	31.06	29.72	29.27	27.70	26.02	24.11	22.12	20.13	18.83	18.70	18.64
EXISTING LEVEL	32.40	31.06	29.72	29.27	27.70	26.02	24.11	22.12	20.13	18.83	18.70	18.64
PR LEVELS	29.65	27.90	25.78	23.81	23.72	22.76	20.63	20.53	20.43			
LEVEL DIFF.	-2.75	-3.16	-3.94	-5.46	-3.98	-3.27	-3.48	-1.59	0.30			
CHAINAGE	0.00	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	54.82

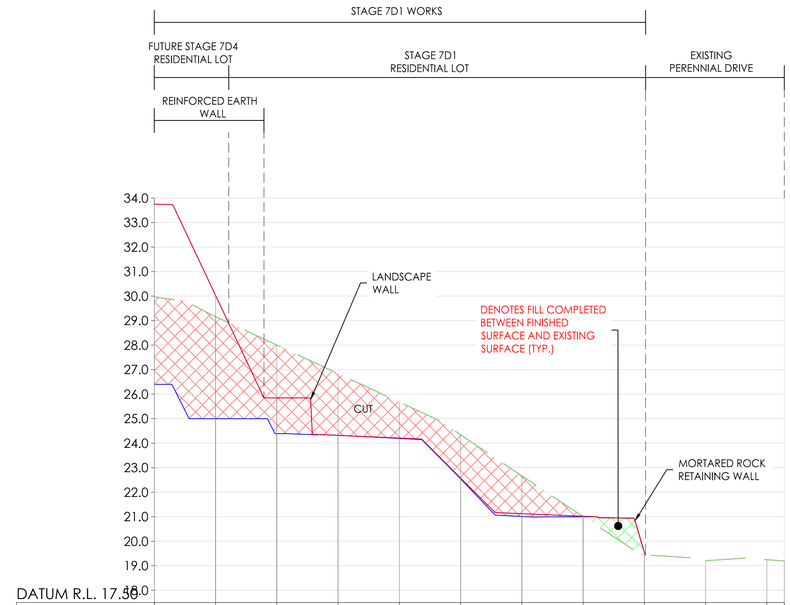
A-A - CROSS SECTION
SCALES: HORIZONAL 1:250 VERTICAL 1:125 (2x)



DATUM R.L. 16.50

BULKING LEVEL	30.15	29.04	28.11	26.96	25.80	24.48	22.89	21.24	19.63	19.06	19.02	18.92
EXISTING LEVEL	30.15	29.04	28.11	26.96	25.80	24.48	22.89	21.24	19.63	19.06	19.02	18.92
PR LEVELS	29.56	25.01	25.00	24.07	23.96	22.67	20.88	20.78	20.67			
LEVEL DIFF.	-0.59	-4.03	-3.11	-2.89	-1.84	-1.81	-2.02	-0.46	1.04			
CHAINAGE	0.00	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	53.12

B-B - CROSS SECTION
SCALES: HORIZONAL 1:250 VERTICAL 1:125 (2x)



DATUM R.L. 17.50

BULKING LEVEL	29.97	29.16	28.00	26.84	25.68	24.34	22.67	21.01	19.43	19.21	19.24	19.20
EXISTING LEVEL	29.97	29.16	28.00	26.84	25.68	24.34	22.67	21.01	19.43	19.21	19.24	19.20
PR LEVELS	26.40	25.00	24.39	24.32	24.19	22.55	21.01	21.00	19.55			
LEVEL DIFF.	-3.57	-4.16	-3.61	-2.52	-1.49	-1.80	-1.66	-0.01	0.12			
CHAINAGE	0.00	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00	51.42

C-C - CROSS SECTION
SCALES: HORIZONAL 1:250 VERTICAL 1:125 (2x)

Revision	Date	Reason	Drawn	Checked
1	13.02.2024	ISSUED FOR CONSTRUCTION	NH	TS
0	22.01.2024	ISSUED FOR CONSTRUCTION	NH	TS

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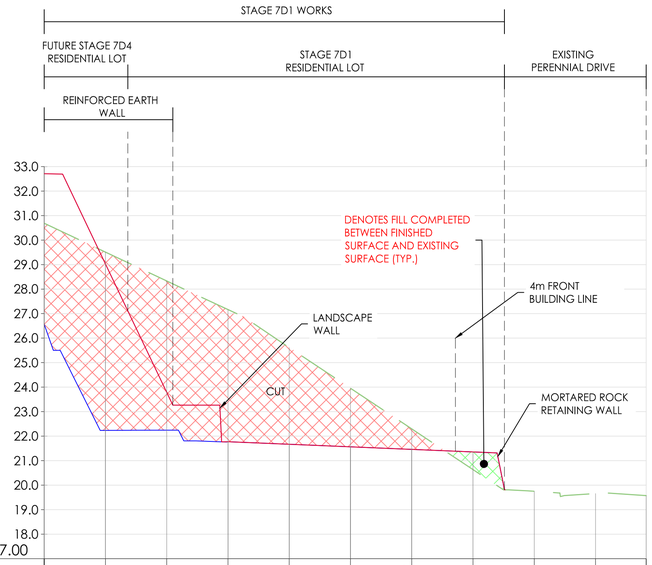
Project
RIVER VALLEY - STAGE 7D1

Drawing Title
CROSS SECTIONS - SHEET 1

Client
YOURLAND

Purpose of Issue	Drawn By	Checked By	Drawn Scale	Date of First Issue
ISSUED FOR CONSTRUCTION	NH	TS	1:250 @ A1	19.01.2024

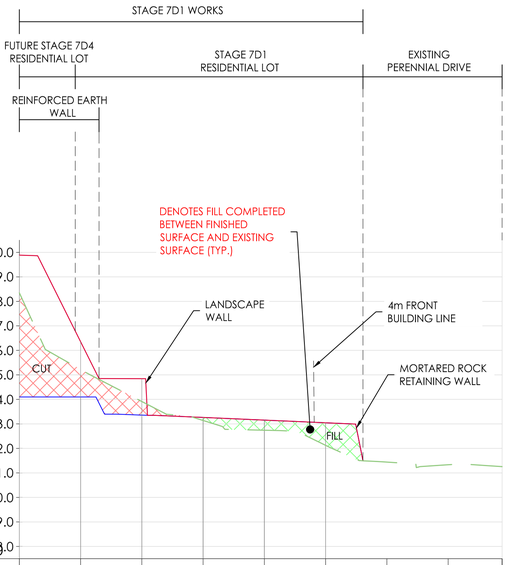
Project Number	Origin	Zone	Level	File Type	Role	Number	Revision
15006	CJA	7D1	00	DR	C	9910	1



DATUM R.L. 17.00

EXISTING LEVEL	30.69	29.51	28.33	27.17	25.61	23.95	22.30	20.64	19.75	19.66	19.57
BULKING LEVEL	30.69	29.51	28.33	27.17	25.61	23.95	22.30	20.64	19.75	19.66	19.57
PR LEVELS	26.57	22.24	22.24	21.77	21.67	21.56	21.46	21.36			
LEVEL DIFF.	-4.12	-7.27	-6.09	-5.39	-3.95	-2.39	-0.83	0.72			
CHAINAGE	0.00	5.00	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	49.13

D-D - CROSS SECTION
SCALES: HORIZONAL 1:250 VERTICAL 1:125 (2x)



DATUM R.L. 17.00

EXISTING LEVEL	28.35	25.22	23.91	23.14	22.74	22.12	21.44	21.33	21.26
BULKING LEVEL	28.35	25.22	23.91	23.14	22.74	22.12	21.44	21.33	21.26
PR LEVELS	24.10	24.10	23.36	23.26	23.15	23.04			
LEVEL DIFF.	-4.25	-1.12	-0.55	0.12	0.41	0.92			
CHAINAGE	0.00	5.00	10.00	15.00	20.00	25.00	30.00	35.00	39.40

E-E - CROSS SECTION
SCALES: HORIZONAL 1:250 VERTICAL 1:125 (2x)

Revision	Date	Reason	Drawn	Checked
2	13.02.2024	ISSUED FOR CONSTRUCTION	NH	TS
1	24.01.2024	ISSUED FOR CONSTRUCTION	NH	TS
0	22.01.2024	ISSUED FOR CONSTRUCTION	NH	TS

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The works described on this drawing must be undertaken by competent Contractors with an appropriate level of experience who have prepared appropriate Safe Work Method Statements (SWMS) relating to these works. The contractor is responsible for the management of all risks associated with the construction activities stated on this drawing.

This drawing should not be issued in part and must be read in conjunction with all appropriate specifications, notes pages, details and authority drawings as appropriate.

Dial before you dig. BEWARE OF UNDERGROUND SERVICES. The location of underground services are approximate only and their exact position should be proven on site. No guarantee is given that existing services are shown.

Yourland Developments

CJ ARMS

www.cjarms.com

Project
RIVER VALLEY - STAGE 7D1

Drawing Title
CROSS SECTIONS - SHEET 2

Client
YOURLAND

Purpose of Issue
ISSUED FOR CONSTRUCTION

Drawn By	Checked By	Drawn Scale	Date of First Issue
NH	TS	1:250 @ A1	19.01.2024

Project Number	Origin	Zone	Level	File Type	Role	Number	Revision
15006	CJA	7D1	00	DR	C	9920	2

Appendix E Lot fill certificates

- **Lot 17**
- **Lot 18**
- **Lot 19**

Tonkin+Taylor

CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT : River Valley Stage 7D1,
Lots 17, 18 and 19

REF: 1000780.1000.R7.v2

CLIENT : **Maribyrnong Riverside Development Pty Ltd**
Level 1, 68 Clarke Street
Southbank VIC 3006

DATE: 21.02.2024

SUMMARY

Chadwick Geotechnics Pty Ltd conducted, Level 1 inspection and testing, in accordance with Section 8.2 Level 1 inspection and Testing *AS3798-2007, Guidelines on earthworks for commercial and residential developments,* during the filling of the site.

So far as can be determined, the fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved.

LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Chadwick Geotechnics Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of the structural fill (excluding topsoil).

This report is based on the conditions present and factors affecting the soil at the time of inspection (8 February 2024 and was completed on 10 February 2024). No responsibility or liability will be accepted and Chadwick Geotechnics Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions since the site testing.

TONKIN & TAYLOR PTY LTD

Sotir Stojcevski
Project Manager

Trevor Smith
Project Director

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