



**Level 1 Geotechnical
Inspection and Testing
Authority Report**

**Stage 7C West, River Valley Estate,
Sunshine North**

Prepared for
Yourland Pty Ltd

Prepared by
Tonkin & Taylor Pty Ltd

Date
January 2023

Job Number
1003809.1000R.7C.West v1



**Together we create and
sustain a better world**

www.tonkintaylor.com.au

Document control

Title: Level 1 Geotechnical Inspection and Testing Authority Report					
Date	Version	Description	Prepared by:	Reviewed by:	Authorised by:
10.01.2023	1	Level 1 Geotechnical Inspection and Testing Authority Report, Stage 7C West, River Valley Estate, Sunshine North	SOST	DRG	TJJC

Distribution:

Yourland Pty Ltd

1 electronic copy

CJ Arms Pty Ltd

1 electronic copy

Tonkin & Taylor Pty Ltd (FILE)

1 electronic copy

Table of contents

1	Introduction	1
2	Project Details	2
2.1	Location	2
2.2	Roles	3
2.3	Dates on Site	3
2.4	Included areas	4
2.5	Excluded areas	5
3	Specifications	7
4	Inspection and testing	8
4.1	Earthworks	8
4.2	Earthworks Plant	8
4.3	Fill material	9
4.4	Subgrade Assessment / Proof Roll / Benching	10
4.5	Engineered fill construction	11
4.6	Density Testing	12
4.7	Fill thickness analyses	14
5	Conclusion	15
6	Applicability	16
Appendix A	Bulk Earthworks Test Locations	
Appendix B	Summary of Density Test Results	
Appendix C	Laboratory Test Certificates	
Appendix D	Bulk Earthworks Drawings	

1 Introduction

Tonkin and Taylor Pty Ltd (T+T) was engaged by Yourland Pty Ltd (Yourland), to provide Level 1 Geotechnical Inspection and Testing Authority (GITA) services for the earthworks conducted within the upper lots (Lot 11 to Lot 20 and Lot AA) of Stage 7C of the River Valley Estate in Sunshine North between 8 May 2021 and 7 July 2021. The Upper Lots area of the Stage 7C is referred to herein as 'Stage 7C West'. The Eastern part of Stage 7C (also known as the Reserve), was previously completed and reported under Ref: 1003809.1000.7C East v1, dated November 2022.

The lots within Stage 7C West are shown in the site plan¹ attached in Appendix D.

As part of the Stage 7C West, Douglas Partners Pty Ltd (DP) designed a Reinforced Earth Retaining Wall (RERW) with a rock facade within the eastern part (the downhill side) of the upper residential lots, against 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 7C West lot certificates (to be issued at 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".

¹ Detailed Layout Plan, Sheet 1 of 2, prepared by CJ Arms, Rev 1, dated 19.12.2022

2 Project Details

2.1 Location

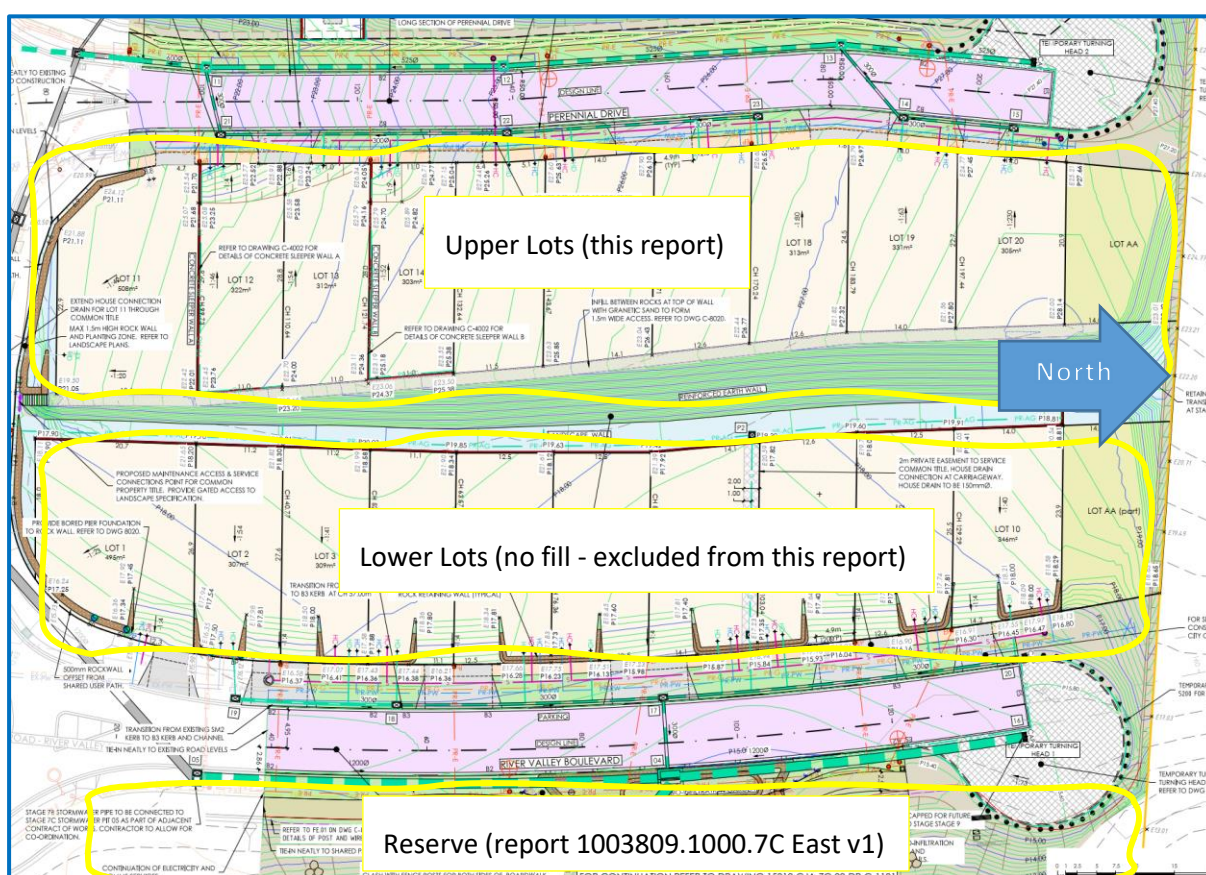
River Valley Estate is in the western Melbourne suburb of Sunshine North. The estate extends on both sides of River Valley Boulevard and is to the west of Maribyrnong River.

Stage 7C West of River Valley Estate, comprises of eleven (11) upper lots and eleven (11) lower lots. The upper lots, namely Lot 11 to Lot 20 and the upper part of Lot AA, located to the East of Perennial Drive as shown in the extract from the Detailed Layout Plan² in Figure 1, are included in this report.

The lower lots indicated in Figure 1 did not have fill placed under level 1 GITA and are not included in this report.

The Reserve on the downhill part of the site (Stage 7C East), was previously completed and is reported separately by T+T.

Figure 1 Stage 7C – extract from CJ Arms drawing ‘Detailed Layout Plan’



² Detailed Layout Plan, Sheet 1 of 2, prepared by CJ Arms, Rev 1, dated 19.12.2022

2.2 Roles

The organisations and their roles are presented in Table 1

Table 1: Roles on the project

Role	Organisation
Developer	Yourland 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.

2.3 Dates on Site

Geotechnical technical and engineering staff from our company were onsite for the duration of the program for the bulk earthworks on the days shown in Table 2 below.

Table 2: Dates on site – Level 1 GITA by T+T during bulk earthworks

Month	Date
May 2021	8, 13, 17, 18, 19, 21, 22, 26, 27 and 29
July 2021	6 and 7

Once the bulk earthworks were complete, Level 1 GITA personnel from DP supervised the construction of the RERW between 3 March and 3 December 2022. Personnel from T+T carried out occasional site visits and conducted 3rd party overview of the works DP Level 1 personnel conducted on the dates shown in Table 3.

Table 3: Dates on site by T+T – visits during RERW construction

Month	Date
April 2022	26, 29
May 2022	11, 27
June 2022	10, 15
October 2022	19, 20, 21, 25, 27, 28
November 2022	8, 18, 24, 25, 28

2.4 Included areas

This report is applicable to material placed as part of the bulk earthworks by Winslow within Stage 7C West, as shown on the following documents:

- Site Plan drawing (1 page) prepared by CJ Arms titled 'Volume Comparison As Built Bulk Level VS Existing Ground Level', attached in Appendix D. Extract of this drawing is shown in Figure 2.
- Long Sections drawings (2 pages) prepared by CJ Arms titled 'Typical Sections – Site Sections', Sheets 1 of 2 and 2 of 2, attached in Appendix D. Extract of a typical long section (in this case C-C') is shown in Figure 3.

Figure 2: Extract from CJ Arms drawing showing Bulk Earthworks³ fill thickness supervised by T+T

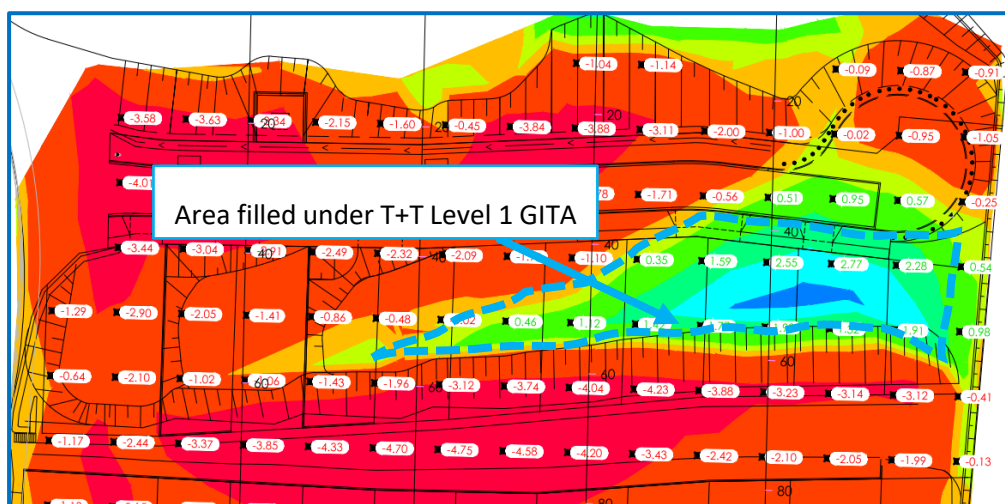
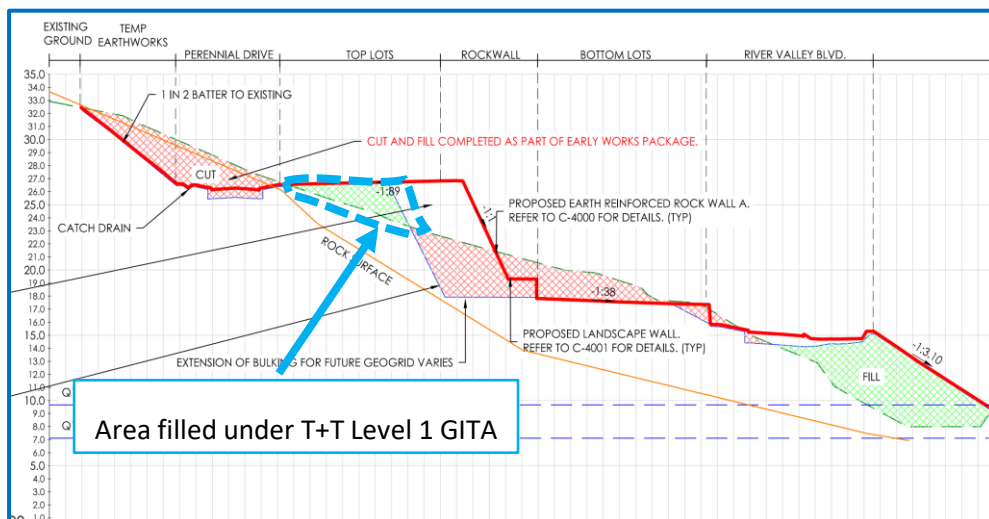


Figure 3: Extract from CJ Arms drawing⁴ showing Long Section C-C' showing the fill supervised by T+T



³ Site Plan prepared by CJ Arms titled 'As Built Bulk Level VS Existing Ground Level' – attached in Appendix D

⁴ Long Sections drawing prepared by CJ Arms titled 'Typical Sections – Site Sections' – attached in Appendix D

The bulk earthworks encompassed areas within the upper lots shown on the Site Plan and Long Sections in Appendix D as follows:

- South to North direction, approximately 80m length starting at the indicated Section B-B' (Lot 15) to about 25m to north of D-D' (Lot AA).
- East to West direction, as follows:
 - Section A-A' = no fill placed
 - Section B-B' = Chainage 52.50 to Chainage 57.50
 - Section C-C' = Chainage 37.50 to Chainage 55.0
 - Section D-D' = Chainage 35.0 to Chainage 55.0

As shown in Figure 2 and in the drawings in Appendix D, fill was placed between Lot 15 and Lot AA.

The fill levels indicated in Figures 2 and 3 are discussed further in Section 4.8: Fill Thickness Analyses.

2.5 Excluded areas

This report does not include fill outside the general boundary of the filled areas discussed in Section 2.4 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.

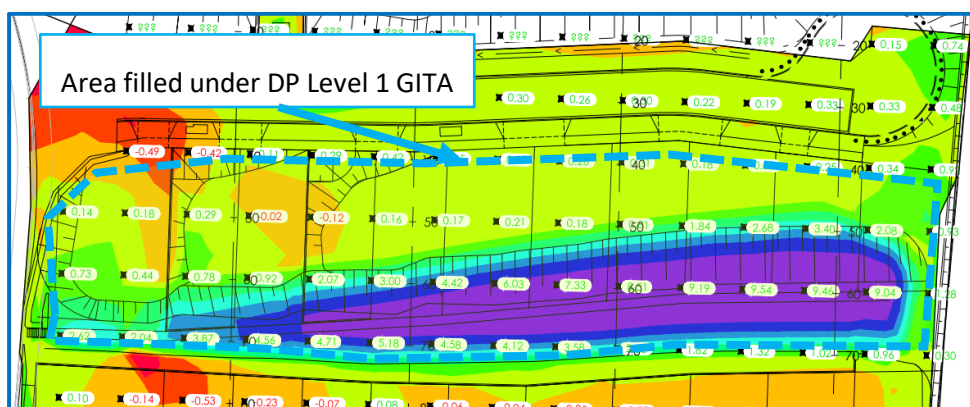
Fill placed in less than 200mm thickness on Lots 11 to 14 is not included in this report.

The RERW fill, the façade, boulders and rocks placed on the eastern side of the engineered fill, are not included in this report.

The RERW construction including the construction of the engineered fill between the bulk earthworks levels and the finished surface levels were supervised under Level 1 GITA personnel from Douglas Partners. The fill thicknesses and areas of the RERW and associated fill placed under DP supervision is shown on the following drawings:

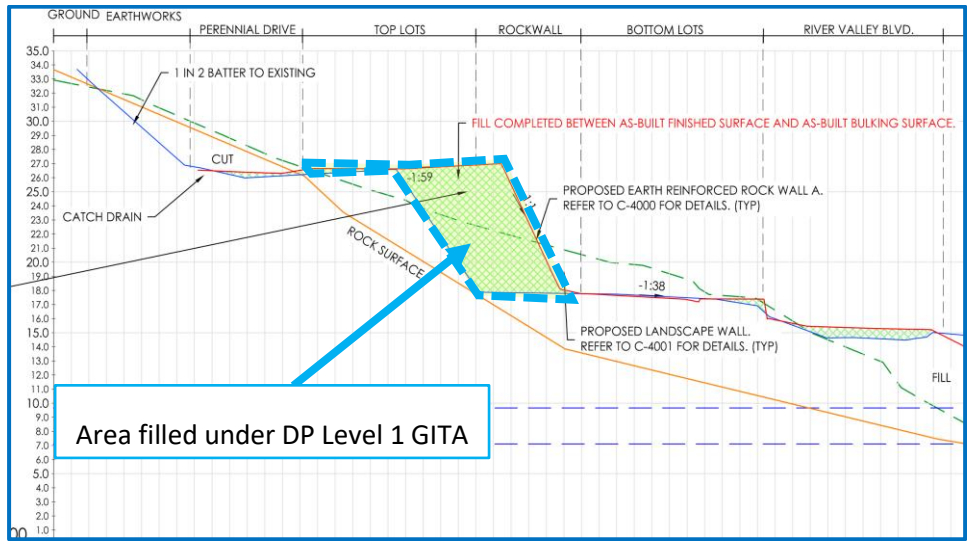
- Site Plan drawing (1 page) prepared by CJ Arms titled 'As Built FS Level VS As Built BS Level', attached in Appendix E. Extract of this drawing is shown in Figure 4.
- Long Sections drawings (2 pages) prepared by CJ Arms titled 'Typical Sections – Site Sections', Sheets 1of 2 and 2 of 2, attached in Appendix D. Extract of Long Section C-C' is shown in Figure 5.

Figure 4: Extract from CJ Arms drawing⁵ showing As-Constructed fill thickness supervised by DP



⁵ Site Plan prepared by CJ Arms titled 'As Built FS Level VS As Built BS Level' – attached in Appendix E

Figure 5: Extract from CJ Arms drawing ⁶ showing typical section with fill supervised by DP



⁶ Long Sections drawing prepared by CJ Arms titled 'Typical Sections – Site Sections' – attached in Appendix E

3 Specifications

Specifications for the bulk earthworks were prepared by T+T for the project in September 2020 under reference 1000780.1.S1.Rev 04 – referred to as ‘T+T Specifications’ herein.

The works were to be conducted in general accordance with the T+T Specifications and with the ‘Guidelines on earthworks for commercial and residential developments’ of AS 3798-2007.

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

- 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 the 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 Specifications, Type 2 Engineered Fill materials be used, with a maximum particle size of 75mm diameter.
- 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 $\pm 3\%$ of the soils 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.

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

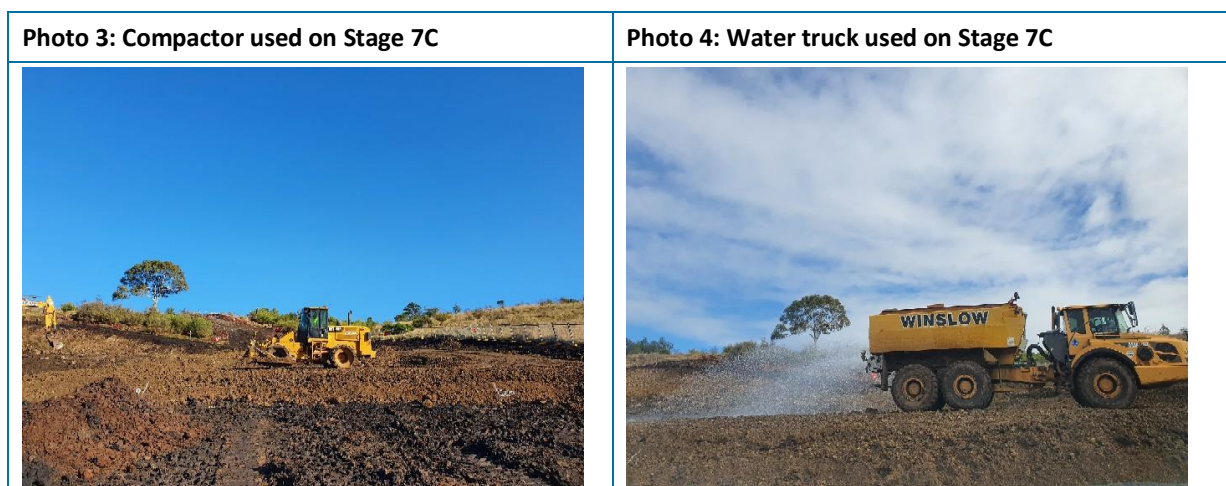
4.2 Earthworks Plant

The contractor used the following machinery during the earthworks:

- Screening plant – utilised in Stage 7D, preparing the source materials for use in Stage 7C.
- Excavator – utilised for removing the uncontrolled fill and topsoil from Stage 7C.
- Moxy trucks – utilised for moving the fill from the screened stockpiles in Stage 7D to the fill pads in Stage 7C, and for removal of the unsuitable soils from Stage 7C.
- Compactor – utilised for the compaction of the engineered fill.
- Water cart – used for moisture control of the engineered fill.

Figure 6: Photographs of earthworks plant used on site

Photo # and Description	Photo # and Description
<p>Photo 1: Screening plant used in Stage 7D</p> 	<p>Photo 2: Excavator and Moxy truck – loading screened fill material from Stage 7D</p> 



Note: Filling for Stage 7C East and Stage 7C West was carried out contemporaneously therefore source material photographs are relevant to both sites (Photo 1 and Photo 2 from 1003809.1000.7C East v1 have been duplicated).

4.3 Fill material

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

Sample taken from the fill were taken for geotechnical compliance testing during the works. The material compliance test results are summarised in Table 4. The laboratory test certificates are attached in **Appendix C**.

Table 4: Summary of laboratory test results

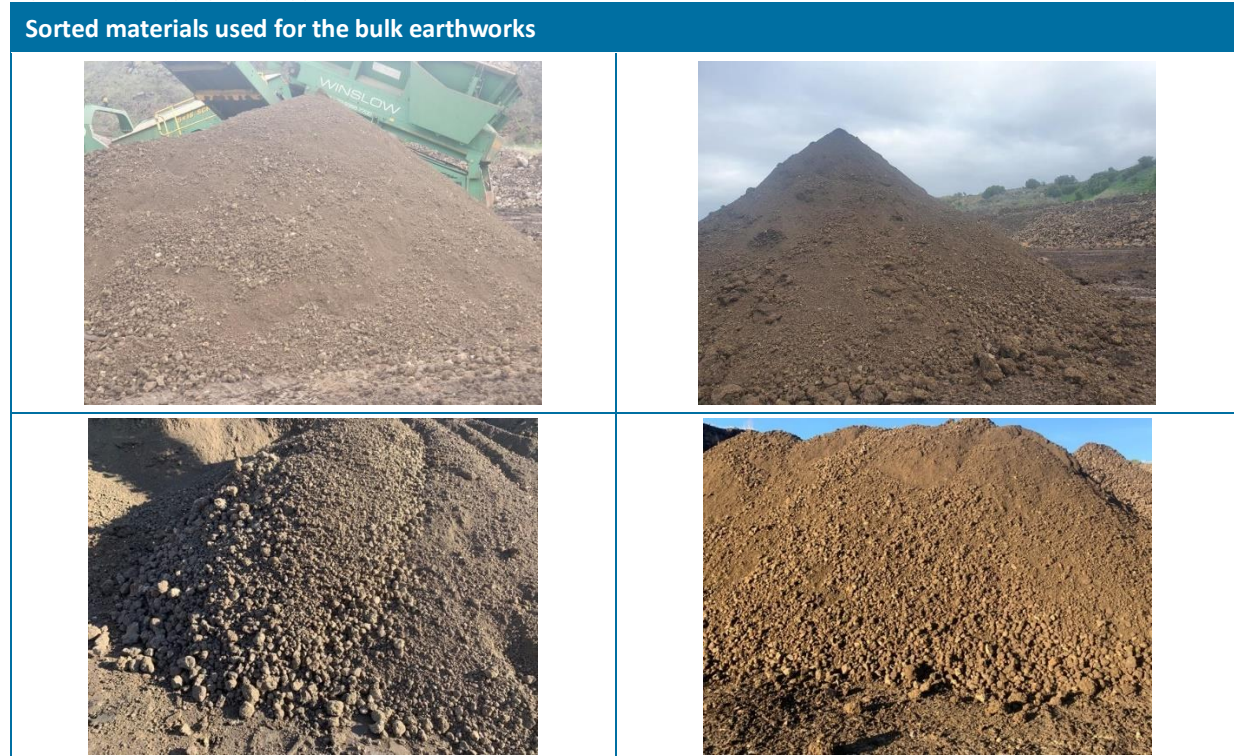
Sample No. / Date	Particle Size Distribution (% passing)						Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
	37.5mm	13.2mm	4.75mm	1.18mm	425µm	75µm			
01009 / 13.05.2021	98	84	75	66	61	53	84	20	64
01079 / 19.05.2021	100	92	81	68	61	53	75	20	55
0112 / 21.05.2021	100	97	93	89	78	45	33	11	22
01385 / 21.06.2021	96	85	71	62	57	50	78	23	55

Note: Filling for Stage 7C East and Stage 7C West was carried out contemporaneously therefore source material compliance testing is relevant to both fill sites (test results reported in 1003809.1000.7C East v1 have been duplicated in Table 4).

The laboratory test results indicated material is clay of medium to 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 Specifications for this project.

Several photographs of the sieved fill materials used during construction are shown in Figure 7.

Figure 7 Photographs of typical material used on site



Note: Filling for Stage 7C East and Stage 7C West was carried out contemporaneously therefore source material photographs are relevant to both sites (Figure 7 photographs from 1003809.1000.7C East v1 have been duplicated).

The soil is 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 the site was progressively assessed during the period Level 1 field personnel were on site.

Subgrade assessment was conducted following the removal of the topsoil and the uncontrolled fill that was present on site. Some of the excavated uncontrolled fill comprised suitable materials that were stockpiled and re-used in controlled manner as engineered fill within Stage 7C.

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 weathered rock with clay seams.

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 Specifications. No soft spots or deflections were encountered during the inspections and proof rolling of the area.





Generally proof rolling was conducted using a loaded water truck or a moxy by conducting a minimum of 2 passes in all stripped areas.

Following the satisfactory proof roll and the acceptance of the subgrade, the area was scarified and compacted by 6 passes of the Compactor prior to the placement of the first layer of fill.

As the site was on a grade sloping from west (Perennial Drive) towards the east (middle Lots – Lot 1 to Lot 10), benching was undertaken in maximum 0.5m high increments. Benches did not exceed the specified 0.5m height and were not less than 1m width. Once the batter was benched, the area was approved for a horizontal layer of fill to be placed.

Several photographs of the proof roll and benching during fill construction are shown in Figure 8.

Figure 8 Photographs showing the subgrade proof roll and benching on the upper lots

Photograph number and description	Photograph number and description
Photograph 1: Proof Roll upper Lots	Photograph 2: Proof Roll upper Lots
	
Photograph 3: Benching on upper Lots	Photograph 4: Benching on upper Lots
	

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 compactor. 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 Figure 9.

Figure 9: Photographs showing the fill construction on the upper lots

Photograph number and description	Photograph number and description
Photograph 1: Looking to South from Lot AA	Photograph 2: Looking to West from the lower lots. Compaction of fill on the upper lots
	
Photograph 3: Looking to North from Lot 15. Compaction on Lot AA.	Photograph 4: Looking to South from Lot 20.
	

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 material type per layer per 2500m² or 1 test per 500m³ distributed reasonably evenly or 3 tests per lot – whichever requires the most tests in accordance with Type 1 Earthworks (large scale operations) as defined in Table 8.1 of the AS 3798-2007;



- 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
- 1 test per 2 layers per 50m² distributed reasonably evenly throughout the fill depth –in accordance with Type 4 Earthworks (confined operations) as defined in Table 8.1 of the AS 3798-2007.

A total of thirty-five (35) 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.

Figure 10: Field Density Testing

Photograph number and description	Photograph number and description
Photograph 1: Field density test	Photograph 2: Field density test
	

4.7 Fill thickness analyses

CJ Arms provided copy of 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, As – Built Bulk Level VS Existing Ground Level', No 9502, Rev P01, dated 22.10.2022.

Long Sections drawings showing the fill placed as part of the bulk earthworks are also provided by CJ Arms under reference 'Typical Sections – Site Sections', Sheets 1 of 2 and 2 of 2, attached in Appendix D.

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 5. Random points were selected for the analysis, and it is assumed the fill between the analysed survey points is of a similar thickness.

Table 5: Fill Thickness Analyses - Bulk Earthworks

Section	Chainage (m)	Fill thickness shown on drawings (mm)	No. of layers placed under Level 1 GITA	Average layer thickness of $\leq 250\text{mm}$	Meet Project Specifications
A-A'	Any chainage 40m to 60m	0	0	n/a	n/a
B-B'	50.00	0	0	n/a	n/a
B-B'	52.50	130	1	Yes	Yes
B-B'	55.00	170	1	Yes	Yes
B-B'	57.50	0	0	n/a	n/a
C-C'	37.50	200	1	Yes	Yes
C-C'	40.00	650	3	Yes	Yes
C-C'	42.50	1100	4	Yes	Yes
C-C'	45.00	1530	6	Yes	Yes
C-C'	47.50	1920	8	Yes	Yes
C-C'	50.00	2320	0	Yes	Yes
C-C'	52.50	2300	9	Yes	Yes
C-C'	55.00	230	1	Yes	Yes
C-C'	57.50	0	0	n/a	n/a
D-D'	40.00	3040	12	Yes	Yes
D-D'	42.50	3440	14	Yes	Yes
D-D'	45.00	3820	15	Yes	Yes
D-D'	47.50	4240	17	Yes	Yes
D-D'	50.00	3760	15	Yes	Yes
D-D'	52.50	1630	7	Yes	Yes
D-D'	55.00	0	0	n/a	n/a

Note: 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.

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 7C West (Lots 11 to 20 and AA, as noted in Section 2.4), as 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 Yourland Pty Ltd in good faith and in accordance with the Tonkin and Taylor and Chadwick Geotechnics quality system for the earthworks filling at the site.

This report is based on the nature of the project and the prevailing conditions between 30 April 2021 and 7 July 2021. No responsibility or liability will be accepted, and Tonkin and Taylor is indemnified to the full extent permitted by law 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.

Should you require any further information regarding this report, please do not hesitate to contact the undersigned on (03) 8796 7900.

Tonkin & Taylor Pty Ltd
Environmental and Engineering Consultants


Report prepared by:

Authorised for Tonkin & Taylor Pty Ltd by:



.....

Sotir Stojcevski
Earthworks Supervision Coordinator



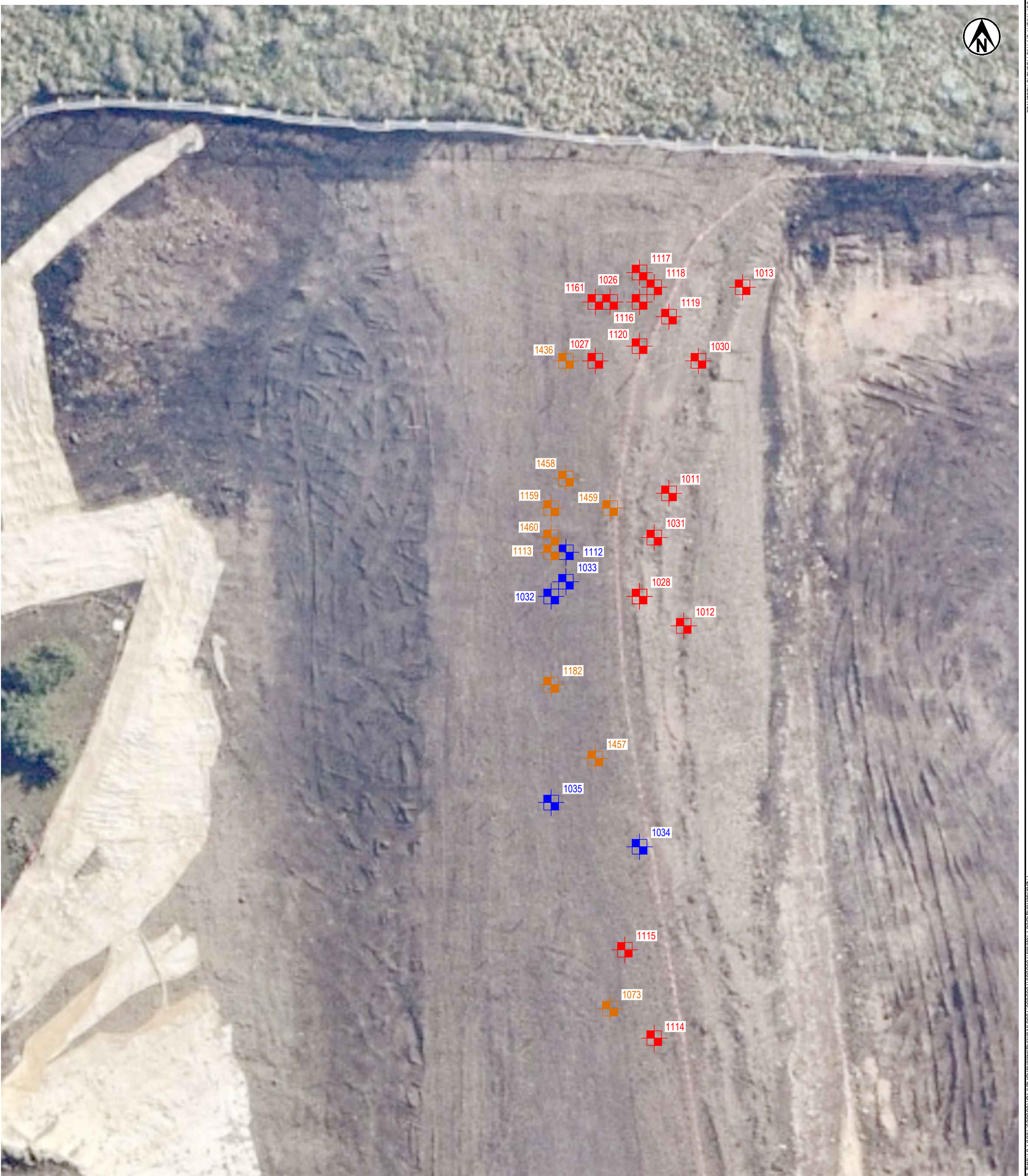
.....

Tim Chadwick
Project Director




11-Jan-23

\\ttgroup.local\corporate\dandenong\geo projects\1003809\1003809.1000\workingmaterial\level 1 report - 7c upper lots - west\1003809.1007c west - river valley 7c upper lots t&t_new 2022.12.19.docx

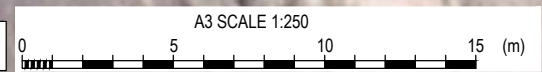
Appendix A Bulk Earthworks Test Locations



LEGEND

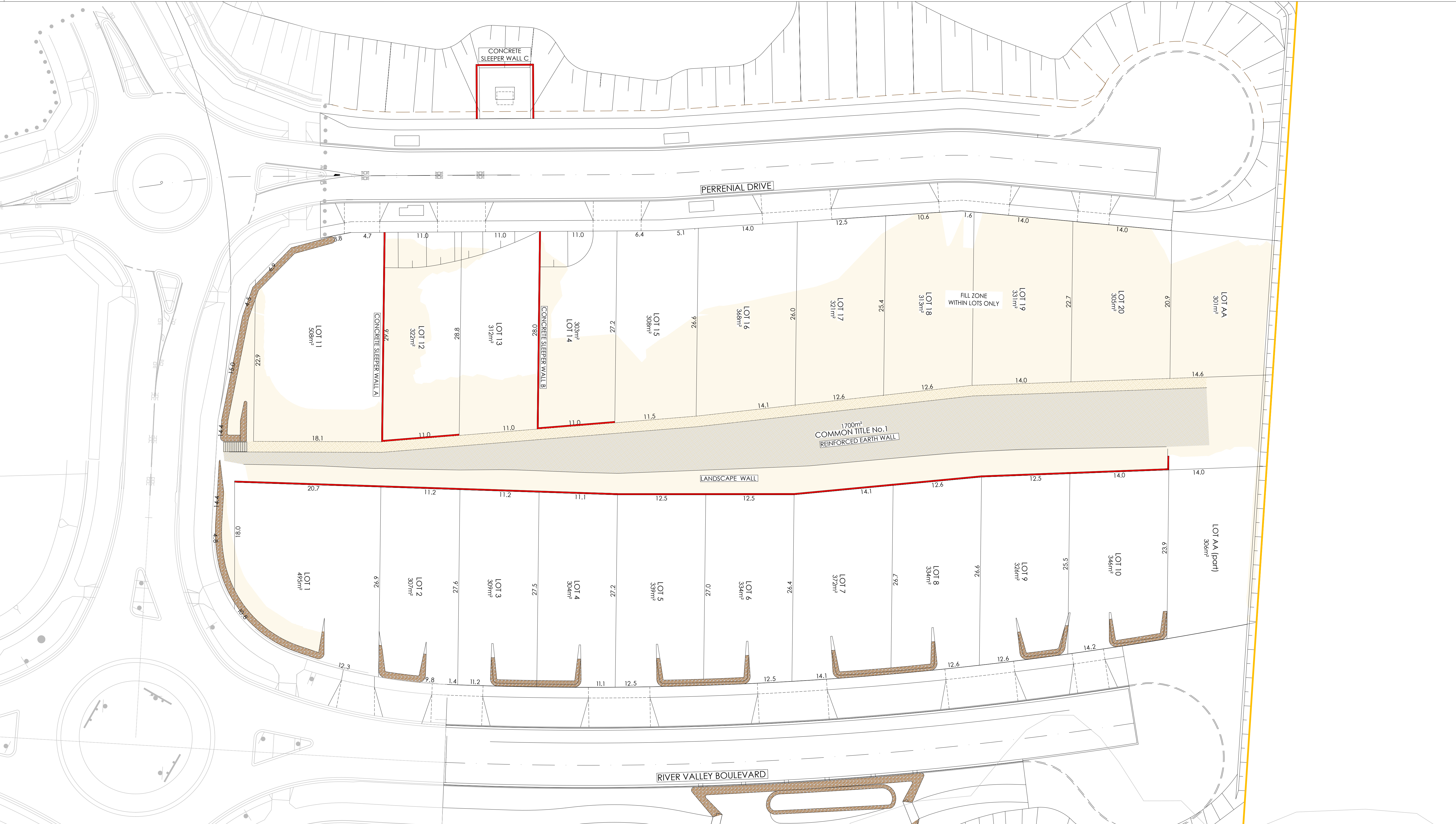
-  1011 LEVEL 1 GITA FIELD DENSITY TEST (LAYERS 1 TO 5)
-  1011 LEVEL 1 GITA FIELD DENSITY TEST (LAYERS 6 TO 10)
-  1011 LEVEL 1 GITA FIELD DENSITY TEST (LAYERS 11 TO 17)

NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD IMAGERY DATE: 01/09/2021.



ORIGINAL IN COLOUR

PROJECT No. 1003809.1000			CLIENT YOURLAND/CJ ARMS		
DESIGNED	SOST	Oct.22	PROJECT RIVER VALLEY ESTATE STAGE 7C - WEST		
DRAWN	KMJA	Oct.22	TITLE LEVEL 1 GITA FIELD DENSITY TEST LOCATIONS		
CHECKED	SOST	Nov.22	SITE PLAN		
S. STOJCEVSKI		22.11.2022	SCALE (A3) 1:250		
APPROVED		DATE	FIG No. APPENDIX A		REV 1



LEGEND

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

DRAWING NOTES:

- THIS PLAN DETAILS AREAS IN WHICH GREATER THAN 300mm 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 GEOTECHNICAL ENGINEER.

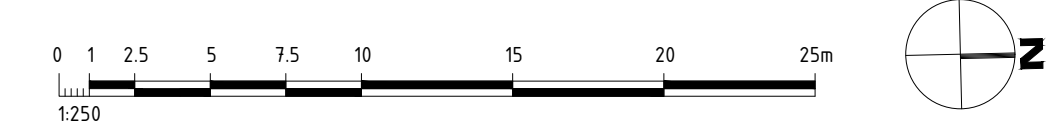
Revised	Date	Reason	Drawn	Checked
1	19.12.2022	ISSUED FOR AS-CONSTRUCTED	TS	VR
0	03.09.2021	ISSUED FOR CONSTRUCTION	JSS	AE

Note for Contractors
 This 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.

ISSUED FOR AS-CONSTRUCTED



YourLand
Developments

CJ ARMS

CIVIL SITWORKS
MELBOURNE
T: (03) 9283 2800 | E: info@cjarms.com | W: www.cjarms.com

Project: RIVER VALLEY - STAGE 7C
 Client: YOURLAND
 Drawing Title: FILL LAYOUT PLAN

Project Number	Origin	Zone	Level	File Type	Rev	Number	Revision
15019	CJA	7C	XX	DR	C	9900	1

Drawn By: JSS
 Checked By: AE
 Drawn Scale: 1:250 @ A1
 Date of first issue: 22.07.20

Appendix B Summary of Density Test Results

HILF Summary Table

River Valley Estate - Stage 7C (West)



Report No	Sample No	Date	East / West	Location [E]	Location [N]	Layer	Density Ratio HILF test (±95%)	Moisture Variation From OMC (±2%)	Pass / Fail	Remarks
HDR:W21MD00288	1023	14/05/2021	West	310365	5819301	RL 23.3 (L2)	101.5	0.5 dry	Pass	Lot AA
HDR:W21MD00288	1024	14/05/2021	West	310367	5819292	RL 23.7 (L2)	103	0.5 dry	Pass	Lot 20
HDR:W21MD00288	1025	14/05/2021	West	310366	5819283	RL 23.4 (L2)	101.5	0.6 dry	Pass	Lot AA
HDR:W21MD00288	1026	14/05/2021	West	310364	5819303	RL 24.0 (L3)	101.5	0.2 dry	Pass	Lot 21
HDR:W21MD00288	1027	14/05/2021	West	310363	5819299	RL 24.1 (L3)	100.5	0.4 dry	Pass	Lot AA
HDR:W21MD00288	1028	14/05/2021	West	310366	5819283	RL 23.7 (L3)	101.5	0.4 dry	Pass	Lot 22
HDR:W21MD00285	1011	14/05/2021	West	310368	5819290	RL 23.0 (L1)	103	0.7 dry	Pass	Lot AA
HDR:W21MD00285	1012	14/05/2021	West	310369	5819281	RL 22.7 (L1)	102.5	0.8 dry	Pass	Lot 23
HDR:W21MD00285	1013	14/05/2021	West	310373	5819304	RL 23.1 (L1)	103	0.2 dry	Pass	Lot AA
HDR:W21MD00289	1030	17/05/2021	West	310370	5819299	FSL -3.467m (L4)	101	0.1 wet	Pass	Lot 24
HDR:W21MD00289	1031	17/05/2021	West	310367	5819287	FSL -2.92m (L5)	99.5	0.2 dry	Pass	Lot AA
HDR:W21MD00290	1032	18/05/2021	West	310360	5819283	FSL -2.6m (L6)	100	0.3 wet	Pass	Lot 25
HDR:W21MD00290	1033	18/05/2021	West	310361	5819284	FSL -2.3m (L7)	100.5	0.6 dry	Pass	Lot AA
HDR:W21MD00291	1034	19/05/2021	West	310366	5819266	FSL -2.25m (L7)	99.5	0.8 dry	Pass	Lot 26
HDR:W21MD00291	1035	19/05/2021	West	310360	5819269	FSL -1.9m (L8)	102.5	0.8 dry	Pass	Lot AA
HDR:W21MD00307	1112	21/05/2021	West	310351	5819286	FSL -1.447m (L10)	101	0.8 wet	Pass	Lot 27
HDR:W21MD00307	1113	21/05/2021	West	310360	5819286	FSL -0.22m (L11)	99.5	1.7 wet	Pass	Lot AA
HDR:W21MD00307	1114	21/05/2021	West	310367	5819253	FSL -1.410m (L1)	101	0.1 dry	Pass	Lot 28
HDR:W21MD00307	1115	21/05/2021	West	310365	5819259	FSL -1.228m (L2)	101.5	0.2 dry	Pass	Lot AA
HDR:W21MD00308	1116	22/05/2021	West	310366	5819303	FSL -2.401m (L1)	104	0.5 wet	Pass	Lot 29
HDR:W21MD00308	1117	22/05/2021	West	310366	5819305	FSL -2.010m (L2)	107.5	0.3 dry	Pass	Lot AA
HDR:W21MD00308	1118	22/05/2021	West	310367	5819304	FSL -1.557m (L3)	102	0.3 dry	Pass	Lot 30
HDR:W21MD00308	1119	22/05/2021	West	310368	5819302	FSL -1.317m (L4)	106.5	0.2 wet	Pass	Lot AA
HDR:W21MD00308	1120	22/05/2021	West	310366	5819300	FSL -1.087m (L5)	104.5	0.8 dry	Pass	Lot 31
HDR:W21MD00320	1159	26/05/2021	West	310360	5819289	FSL -1.870m (L12)	102	0.4 wet	Pass	Lot AA
HDR:W21MD00320	1160	26/05/2021	West	310365	5819248	FSL -1.166m (L12)	101	0.8 wet	Pass	Lot 32
HDR:W21MD00320	1161	26/05/2021	West	310363	5819303	FSL -0.907m (L3)	103	0.0	Pass	Lot AA
HDR:W21MD00325	1173	27/05/2021	West	310364	5819255	(L11)	101	0.4 wet	Pass	Lot 33
HDR:W21MD00328	1182	29/05/2021	West	310360	5819277	(L14)	99.5	1.9 wet	Pass	Lot AA
HDR:W21MD00328	1183	29/05/2021	West	310368	5819225	(L14)	101	1.8 wet	Pass	Lot 34
HDR:W21MD00419	1436	6/07/2021	West	310361	5819299	FSL -0.636m (L15)	103	0.3 dry	Pass	Lot AA
HDR:W21MD00425	1457	7/07/2021	West	310353	5819272	FSL -150mm (L16)	99	2.4 dry	Pass	Lot 35

HILF Summary Table

River Valley Estate - Stage 7C (West)

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



Report No	Sample No	Date	East / West	Location [E]	Location [N]	Layer	Density Ratio HILF test (±95%)	Moisture Variation From OMC (±2%)	Pass / Fail	Remarks
HDR:W21MD00425	1458	7/07/2021	West	310361	5819291	FSL -250mm (L16)	102	0.1 dry	Pass	Lot AA
HDR:W21MD00425	1459	7/07/2021	West	310354	5819289	FSL	100	0.8 dry	Pass	Lot 36
HDR:W21MD00425	1460	7/07/2021	West	310350	5819287	FSL	100	0.8 dry	Pass	Lot AA
End										

Appendix C Laboratory Test Certificates

- **Density and Moisture Test Reports**
- **Geotechnical Compliance Test Reports**



Report No: HDR:W21MD00285

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 7C
Project No.: 1003809.1000
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
 (Senior Technician)
 Date of Issue: 20/05/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01011	S21MD-01012	S21MD-01013		
Field Sample ID	1	2	3		
Client Sample ID	1	2	3		
Date Tested	14/05/2021	14/05/2021	14/05/2021		
Location	Lot 20	Lot 19	Lot AA		
	E 310368	E 310369	E 310373		
	N 5819290	N 5819281	N 5819304		
	Layer 1	Layer 1	Layer 1		
	RL 23.0	RL 22.7	RL 23.1		

Field and Laboratory Data

Depth of Test (mm)	225	225	225		
Depth of Layer (mm)	250	250	250		
AS Sieve Size (mm)	19.0	19.0	19.0		
Oversize Wet (%)	7	10	12		
Field Wet Density (t/m ³)	1.95	1.97	2.03		
Peak Converted Wet Density (t/m ³)	1.89	1.91	1.97		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.5 dry	1.0 dry	0.0		
Hilf Density Ratio (%)	103.0	102.5	103.0		

Comments



Report No: HDR:W21MD00288

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 7C
Project No.: 1003809.1000
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
 (Senior Technician)
 Date of Issue: 21/05/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01023	S21MD-01024	S21MD-01025	S21MD-01026	S21MD-01027	S21MD-01028
Field Sample ID	1	2	3	4	5	6
Client Sample ID	4	5	6	7	8	9
Date Tested	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021
Location	Lot AA	Lot 20	Lot 19	Lot AA	Lot 20	Lot 19
	E 310365	E 310367	E 310366	E 310364	E 310363	E 310366
	N 5819301	N 5819292	N 5819283	N 5819303	N 5819299	N 5819283
	Layer 2	Layer 2	Layer 2	Layer 3	Layer 3	Layer 3
	RL 23.3	RL 23.7	RL 23.4	RL 24.0	RL 24.1	RL 23.7

Field and Laboratory Data

Depth of Test (mm)	225	225	225	225	225	225
Depth of Layer (mm)	250	250	250	250	250	250
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	11	13	9	10	7	9
Field Wet Density (t/m ³)	1.98	2.05	1.93	1.95	1.94	1.98
Peak Converted Wet Density (t/m ³)	1.95	1.99	1.91	1.92	1.92	1.95
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.5 dry	0.5 dry	0.5 dry	0.0	0.5 dry	0.5 dry
Hilf Density Ratio (%)	101.5	103.0	101.5	101.5	100.5	101.5

Comments





Report No: HDR:W21MD00289

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 7C
Project No.: 1003809.1000
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
 (Senior Technician)
 Date of Issue: 29/05/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01030	S21MD-01031			
Field Sample ID	1	2			
Client Sample ID	10	11			
Date Tested	17/05/2021	17/05/2021			
Location	Lot AA	Lot 19			
	E 310370	E 310367			
	N 5819299	N 5819287			
	Layer 4	Layer 5			
	FSL -3.467m	FSL -2.92m			

Field and Laboratory Data

Depth of Test (mm)	225	225			
Depth of Layer (mm)	250	250			
AS Sieve Size (mm)	19.0	19.0			
Oversize Wet (%)	15	15			
Field Wet Density (t/m ³)	2.02	1.97			
Peak Converted Wet Density (t/m ³)	2.00	1.99			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.0	0.0			
Hilf Density Ratio (%)	101.0	99.5			

Comments





Report No: HDR:W21MD00290

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 7C
Project No.: 1003809.1000
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
 (Senior Technician)
 Date of Issue: 29/05/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01032	S21MD-01033			
Field Sample ID	1	2			
Client Sample ID	12	13			
Date Tested	18/05/2021	18/05/2021			
Location	Lot 119	Lot 119			
	E 310360	E 310361			
	N 519283	N 5819284			
	Layer 6	Layer 7			
	FSL -2.6m	FSL -2.3m			

Field and Laboratory Data

Depth of Test (mm)	225	225			
Depth of Layer (mm)	250	250			
AS Sieve Size (mm)	19.0	19.0			
Oversize Wet (%)	11	14			
Field Wet Density (t/m ³)	1.96	2.01			
Peak Converted Wet Density (t/m ³)	1.96	2.00			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.5 wet	0.5 dry			
Hilf Density Ratio (%)	100.0	100.5			

Comments

Report No: HDR:W21MD00291

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 7C
Project No.: 1003809.1000
Order No.:
TRN:

CG Request No.:
Lot No.:



Accredited for compliance with ISO/IEC 17025
- Testing



Accreditation Number: 12719
Site Number: 23249
Approved Signatory: B. Taseski
(Senior Technician)
Date of Issue: 29/05/2021
THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01034	S21MD-01035	S21MD-01036	S21MD-01037	S21MD-01038	S21MD-01039
Field Sample ID	1	2	3	4	5	6
Client Sample ID	14	15	16	17	18	19
Date Tested	19/05/2021	19/05/2021	19/05/2021	19/05/2021	19/05/2021	19/05/2021
Location	Lot 20	Lot 18	Reserve	Reserve	Reserve	Reserve
	E 310366	E 310360	E 310459	E 310464	E 310466	E 310462
	N 5819266	N 5819269	N 5819250	N 5819252	N 5819248	N 5819247
	Layer 7	Layer 8	Layer 1	Layer 2	Layer 3	Layer 4
	FSL -2.25m	FSL -1.9m	FSL -3.45m	FSL -3.2m	FSL -3.0m	FSL -2.764m

Field and Laboratory Data

Depth of Test (mm)	225	225	225	225	225	225
Depth of Layer (mm)	250	250	250	250	250	250
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	9	12	9	0	0	0
Field Wet Density (t/m ³)	1.96	2.01	1.97	1.96	1.99	2.00
Peak Converted Wet Density (t/m ³)	1.97	1.96	1.93	2.06	2.09	2.08
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	1.0 dry	1.0 dry	0.5 dry	0.5 dry	0.5 dry	1.5 dry
Hilf Density Ratio (%)	99.5	102.5	102.0	95.0	95.5	96.0

Comments

Report No: HDR:W21MD00307

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 7C Project No.: 1003809.1000 Order No.: TRN:	CG Request No.: Lot No.:	  <p>Accredited for compliance with ISO/IEC 17025 - Testing</p>  <p>Accreditation Number: 12719 Site Number: 23249 Approved Signatory: B. Taseski (Ravenhall Laboratory Manager) Date of Issue: 27/10/2022 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL</p>
--	---	---

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Sandy Clay

Sample Data

Sample ID	S21MD-01111	S21MD-01112	S21MD-01113	S21MD-01114	S21MD-01115
Field Sample ID	1	2	3	4	5
Client Sample ID	26	27	28	29	30
Date Tested	21/05/2021	21/05/2021	21/05/2021	21/05/2021	21/05/2021
Location	Reserve	Lot 18	Lot 20	Lot 17	Lot 16
	E 310463	E 310351	E 310360	E 310367	E 310365
	N 5919258	N 5819286	N 5819286	N 5819253	N 5819259
	Layer 11	Layer 10	Layer 11	Layer 1	Layer 2
	FSL -1.009m	FSL -1.447m	FSL -0.22m	FSL -1.410m	FSL -1.228m

Field and Laboratory Data

Depth of Test (mm)	225	225	225	225	225
Depth of Layer (mm)	250	250	250	250	250
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	5	9	11	12	11
Field Wet Density (t/m ³)	2.05	2.08	2.06	2.07	2.07
Peak Converted Wet Density (t/m ³)	2.05	2.06	2.07	2.05	2.03
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.0	1.0 wet	1.5 wet	0.0	0.0
Hilf Density Ratio (%)	100.0	101.0	99.5	101.0	101.5

Comments

Report No: HDR:W21MD00308

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 7C Project No.: 1003809.1000 Order No.: TRN:	CG Request No.: Lot No.:	  <p>Accredited for compliance with ISO/IEC 17025 - Testing</p>  <p>Accreditation Number: 12719 Site Number: 23249 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL</p> <p>Approved Signatory: B. Taseski (Ravenhall Laboratory Manager) Date of Issue: 21/10/2022</p>
--	---	--

Sample Details

Location: Stage 7C
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 98% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: 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	S21MD-01116	S21MD-01117	S21MD-01118	S21MD-01119	S21MD-01120
Field Sample ID	1	2	3	4	5
Client Sample ID	31	32	33	34	35
Date Tested	22/05/2021	22/05/2021	22/05/2021	22/05/2021	22/05/2021
Location	Lot AA	Lot AA	Lot AA	Lot AA	Lot AA
	E 310366	E 310366	E 310367	E 310368	E 310366
	N 5819303	N 5819305	N 5819304	N 5819302	N 5819300
	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5
	FSL -2.401m	FSL -2.010m	FSL -1.557m	FSL -1.317m	FSL -1.087m

Field and Laboratory Data

Depth of Test (mm)	225	225	225	225	225
Depth of Layer (mm)	250	250	250	250	250
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	11	19	15	15	12
Field Wet Density (t/m ³)	2.07	2.20	2.07	2.16	2.04
Peak Converted Wet Density (t/m ³)	1.99	2.04	2.03	2.03	1.96
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.5 wet	0.5 dry	0.5 dry	0.0	1.0 dry
Hilf Density Ratio (%)	104.0	107.5	102.0	106.5	104.5

Comments



Report No: HDR:W21MD00320

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 7C
Project No.: 1003809.1000
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: 21/10/2022
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01159	S21MD-01160	S21MD-01161		
Field Sample ID	1	2	3		
Client Sample ID	41	42	43		
Date Tested	26/05/2021	26/05/2021	26/05/2021		
Location	Lot 20	Lot 17	Lot AA		
	E 310360	E 310365	E 310363		
	N 5819228	N 5819248	N 5819303		
	Layer 12	Layer 12	Layer 3		
	FSL -1.870m	FSL -1.166m	FSL -0.907m		

Field and Laboratory Data

Depth of Test (mm)	225	225	225		
Depth of Layer (mm)	250	250	250		
AS Sieve Size (mm)	19.0	19.0	19.0		
Oversize Wet (%)	12	11	9		
Field Wet Density (t/m ³)	2.09	2.05	2.06		
Peak Converted Wet Density (t/m ³)	2.05	2.03	2.00		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.5 wet	1.0 wet	0.0		
Hilf Density Ratio (%)	102.0	101.0	103.0		

Comments





Report No: HDR:W21MD00325

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 7C
Project No.: 1003809.1000
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: 27/10/2022
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly CLay

Sample Data

Sample ID	S21MD-01173				
Field Sample ID	1				
Client Sample ID	41				
Date Tested	27/05/2021				
Location	Lot 17				
	E 310364				
	N 5819255				
	Layer 11				

Field and Laboratory Data

Depth of Test (mm)	225				
Depth of Layer (mm)	250				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	13				
Field Wet Density (t/m³)	2.09				
Peak Converted Wet Density (t/m³)	2.07				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 wet				
Hilf Density Ratio (%)	101.0				

Comments





Report No: HDR:W21MD00328

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 7C
Project No.: 1003809.1000
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: 21/10/2022
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01182	S21MD-01183			
Field Sample ID	1	2			
Client Sample ID	49	50			
Date Tested	29/05/2021	29/05/2021			
Location	Lot 19	Lot 15			
	E 310360	E 310368			
	N 5819277	N 5819225			
	Layer 14	Layer 14			

Field and Laboratory Data

Depth of Test (mm)	225	225			
Depth of Layer (mm)	250	250			
AS Sieve Size (mm)	19.0	19.0			
Oversize Wet (%)	8	8			
Field Wet Density (t/m³)	2.04	2.06			
Peak Converted Wet Density (t/m³)	2.05	2.03			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	2.0 wet	2.0 wet			
Hilf Density Ratio (%)	99.5	101.0			

Comments



Report No: HDR:W21MD00346

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 7C
Project No.: 1003809.1000
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
 (Senior Technician)
 Date of Issue: 4/06/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01247	S21MD-01248			
Field Sample ID	58	59			
Date Tested	3/06/2021	3/06/2021			
Location	E 310497	E 310483			
	N 5819238	N 5819235			
	Layer 4	Layer 18			
	FSL	FSL -0.043m			
	RL 7.729	RL 8.382			

Field and Laboratory Data

Depth of Test (mm)	225	225			
Depth of Layer (mm)	250	250			
AS Sieve Size (mm)	19.0	19.0			
Oversize Wet (%)	15	19			
Field Wet Density (t/m³)	2.14	2.22			
Peak Converted Wet Density (t/m³)	2.08	2.13			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	2.0 dry	2.0 dry			
Hilf Density Ratio (%)	102.5	104.0			

Comments

Report No: HDR:W21MD00419

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 7C
Project No.: 1003809.1000
Order No.:
TRN:

CG Request No.:
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: 21/10/2022
THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01436				
Field Sample ID	1				
Client Sample ID	94				
Date Tested	6/07/2021				
Location	Lot AA				
	E 310361				
	N 5819299				
	Layer 15				
	FSL -0.636m				

Field and Laboratory Data

Depth of Test (mm)	225				
Depth of Layer (mm)	250				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	11				
Field Wet Density (t/m ³)	2.04				
Peak Converted Wet Density (t/m ³)	1.98				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 dry				
Hilf Density Ratio (%)	103.0				

Comments





Report No: HDR:W21MD00425

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 7C
Project No.: 1003809.1000
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: 21/10/2022
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Stage 7C
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 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Derived
Material: Gravelly Clay

Sample Data

Sample ID	S21MD-01457	S21MD-01458	S21MD-01459	S21MD-01460		
Field Sample ID	1	2	3	4		
Client Sample ID	95	96	97	98		
Date Tested	7/07/2021	7/07/2021	7/07/2021	7/07/2021		
Location	Lot 19	Lot AA	Lot 20	Lot 16		
	E 310353	E 310361	E 310354	E 310350		
	N 5819272	N 5819291	N 5819289	N 5819287		
	Layer 16	Layer 16	Layer 17	Layer 17		
	FSL -150mm	FSL -250mm	FSL	FSL		

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 (%)	8	10	10	11		
Field Wet Density (t/m³)	1.99	2.01	2.01	1.99		
Peak Converted Wet Density (t/m³)	2.01	1.98	2.01	1.99		
Compactive Effort	Standard	Standard	Standard	Standard		
Moisture Variation (%)	2.5 dry	0.0	1.0 dry	1.0 dry		
Hilf Density Ratio (%)	99.0	102.0	100.0	100.0		

Comments

Report No: MAT:S21MD-01009/1

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 7C
Project No.: 1003809.1000

Order No.: **CG Request No.:**
TRN: **Lot No.:**



Accredited for compliance with ISO/IEC 17025
- Testing



Accreditation Number: 12719
Approved Signatory: B. Taseski
(Senior Technician)

Site Number: 23249
Date of Issue: 25/05/2021

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location Stage 7C
Sample Location Lot AA, E 310370, N 5819299
Field Sample ID 1
Date Sampled 13/05/2021
Source Site Derived
Material Gravelly Clay
Specification AS Grading
Sampling Method AS1289.1.2.1 Clause 6.4 (b)
Sample ID S21MD-01009

Other Test Results

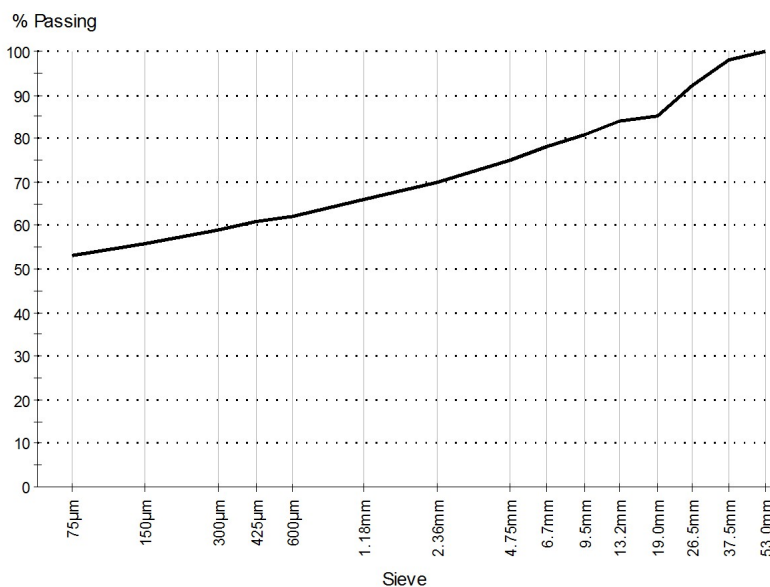
Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	14.0	
Mould Length (mm)		250	
Crumbing		No	
Curling		No	

Particle Size Distribution

AS 1289.3.6.1

Drying by: Oven
Date Tested: 22/05/2021

Note: Sample Washed



Sieve Size	% Passing	Limits
53.0mm	100	
37.5mm	98	
26.5mm	92	
19.0mm	85	
13.2mm	84	
9.5mm	81	
6.7mm	78	
4.75mm	75	
2.36mm	70	
1.18mm	66	
600µm	62	
425µm	61	
300µm	59	
150µm	56	
75µm	53	

Comments

N/A



Western Region Laboratory
 Base Laboratory Accreditation No. 12719
 ACN 143 009 330
 Factory 1/7 Katherine Drive
 Ravenhall VIC 3023

Report No: MAT:S21MD-01009/1

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 7C
Project No.: 1003809.1000

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
 (Senior Technician)
 Date of Issue: 25/05/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Other Test Results

Description	Method	Result	Limits
Cracking		Yes	
Liquid Limit (%)	AS 1289.3.1.2	84	
Plastic Limit (%)	AS 1289.3.2.1	20	
Plasticity Index (%)	AS 1289.3.3.1	64	
Date Tested		17/05/2021	

Comments

N/A



Report No: MAT:S21MD-01079/1

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 7C
Project No.: 1003809.1000

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
 (Senior Technician)
 Date of Issue: 2/06/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

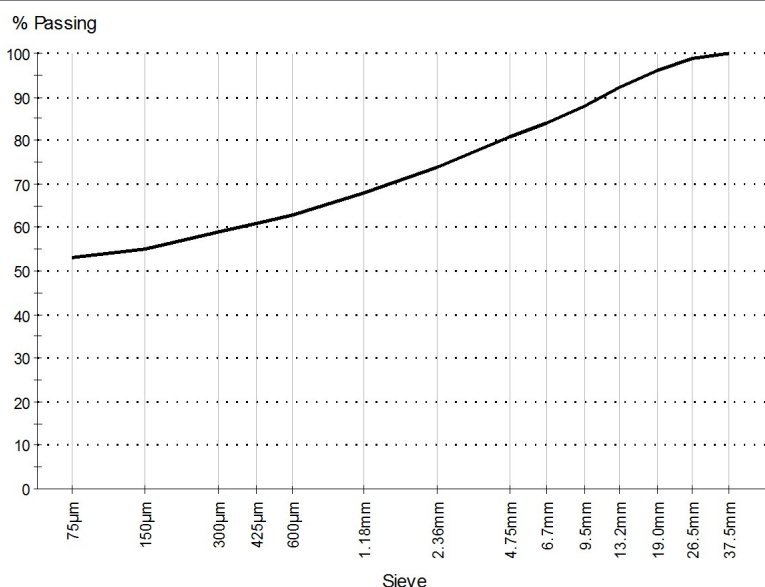
Location: Stage 7C
Sample Location: Lot 19, E 310368, N 5819281
Field Sample ID: 1
Date Sampled: 19/05/2021
Source: Site Derived
Material: Gravelly Clay
Specification: AS Grading
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Sample ID: S21MD-01079

Other Test Results

Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	13.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		Yes	

Particle Size Distribution

AS 1289.3.6.1



Drying by: Oven
Date Tested: 26/05/2021

Note: Sample Washed

Sieve Size	% Passing	Limits
37.5mm	100	
26.5mm	99	
19.0mm	96	
13.2mm	92	
9.5mm	88	
6.7mm	84	
4.75mm	81	
2.36mm	74	
1.18mm	68	
600µm	63	
425µm	61	
300µm	59	
150µm	55	
75µm	53	

Comments

N/A



Western Region Laboratory
 Base Laboratory Accreditation No. 12719
 ACN 143 009 330
 Factory 1/7 Katherine Drive
 Ravenhall VIC 3023

Report No: MAT:S21MD-01079/1

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 7C
Project No.: 1003809.1000

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
 (Senior Technician)
 Date of Issue: 2/06/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Other Test Results

Description	Method	Result	Limits
Cracking		Yes	
Liquid Limit (%)	AS 1289.3.1.2	75	
Plastic Limit (%)	AS 1289.3.2.1	20	
Plasticity Index (%)	AS 1289.3.3.1	55	
Date Tested		26/05/2021	

Comments

N/A

Report No: MAT:S21MD-01121/1

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 7C
Project No.: 1003809.1000

Order No.: **CG Request No.:**
TRN: **Lot No.:**



Accredited for compliance with ISO/IEC 17025
- Testing



Accreditation Number: 12719
Approved Signatory: B. Taseski
(Senior Technician)

Site Number: 23249
Date of Issue: 2/06/2021

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

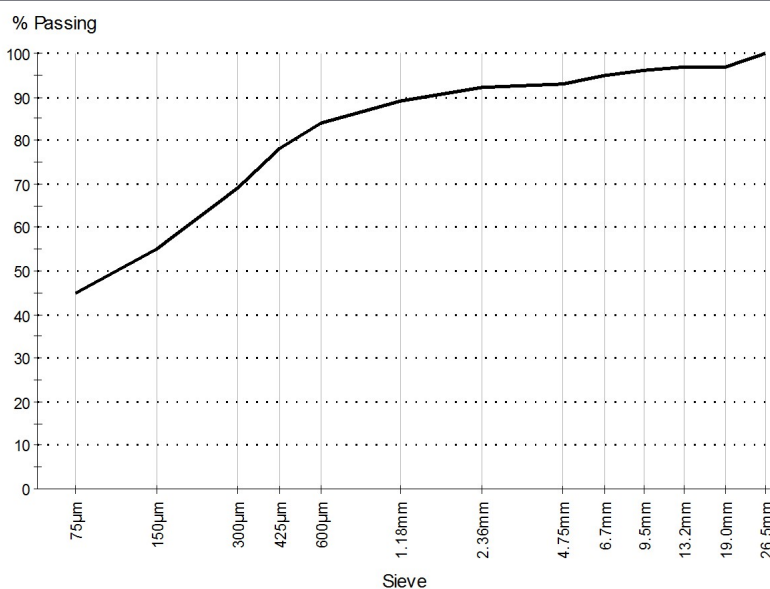
Location Stage 7C
Sample Location Reserve , E 310463, N 5819253
Field Sample ID 1
Date Sampled 21/05/2021
Source Site Derived
Material Gravelly Clay
Specification AS Grading
Sampling Method AS1289.1.2.1 Clause 6.4 (b)
Sample ID S21MD-01121

Other Test Results

Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	6.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		No	

Particle Size Distribution

AS 1289.3.6.1



Drying by: Oven
Date Tested: 1/06/2021

Note: Sample Washed

Sieve Size	% Passing	Limits
26.5mm	100	
19.0mm	97	
13.2mm	97	
9.5mm	96	
6.7mm	95	
4.75mm	93	
2.36mm	92	
1.18mm	89	
600µm	84	
425µm	78	
300µm	69	
150µm	55	
75µm	45	

Comments

N/A



Western Region Laboratory
 Base Laboratory Accreditation No. 12719
 ACN 143 009 330
 Factory 1/7 Katherine Drive
 Ravenhall VIC 3023

Report No: MAT:S21MD-01121/1

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 7C
Project No.: 1003809.1000

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
 (Senior Technician)
 Date of Issue: 2/06/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Other Test Results

Description	Method	Result	Limits
Cracking		Yes	
Liquid Limit (%)	AS 1289.3.1.2	33	
Plastic Limit (%)	AS 1289.3.2.1	11	
Plasticity Index (%)	AS 1289.3.3.1	22	
Date Tested		1/06/2021	

Comments

N/A

Report No: MAT:S21MD-01385/1

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 7C
Project No.: 1003809.1000

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
 (Senior Technician)
 Date of Issue: 16/07/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location Sunshine North
Sample Location Reserve , E 310331, N 5819041, Layer 27
Field Sample ID 1
Date Sampled 21/06/2021
Source Onsite
Material Gravelly CLay
Specification AS Grading
Sampling Method AS1289.1.2.1 Clause 6.4 (b)
Sample ID S21MD-01385

Other Test Results

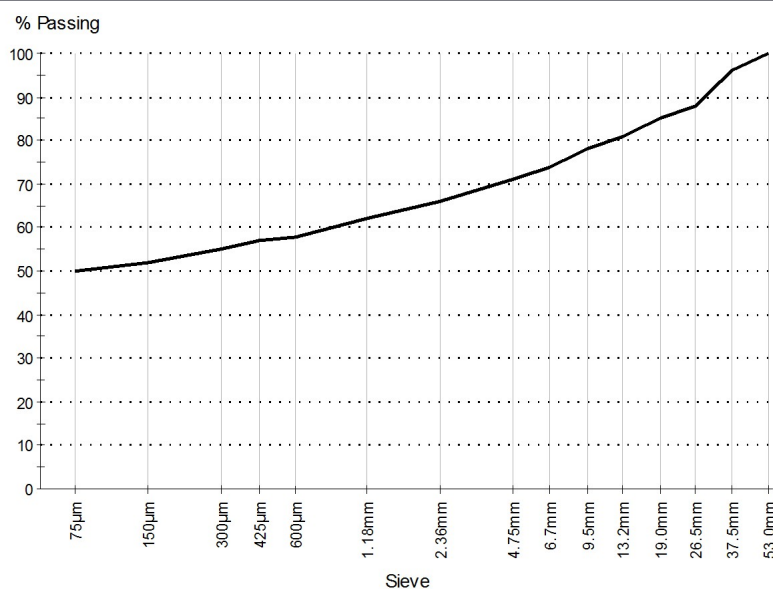
Description	Method	Result	Limits
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	16.5	
Mould Length (mm)		250	
Crumbling		No	
Curling		No	

Particle Size Distribution

AS 1289.3.6.1

Drying by: Oven
Date Tested: 30/06/2021

Note: Sample Washed



Sieve Size	% Passing	Limits
53.0mm	100	
37.5mm	96	
26.5mm	88	
19.0mm	85	
13.2mm	81	
9.5mm	78	
6.7mm	74	
4.75mm	71	
2.36mm	66	
1.18mm	62	
600µm	58	
425µm	57	
300µm	55	
150µm	52	
75µm	50	

Comments

N/A



Western Region Laboratory
 Base Laboratory Accreditation No. 12719
 ACN 143 009 330
 Factory 1/7 Katherine Drive
 Ravenhall VIC 3023

Report No: MAT:S21MD-01385/1

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 7C
Project No.: 1003809.1000

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
 (Senior Technician)
 Date of Issue: 16/07/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Other Test Results

Description	Method	Result	Limits
Cracking		Yes	
Liquid Limit (%)	AS 1289.3.1.2	78	
Plastic Limit (%)	AS 1289.3.2.1	23	
Plasticity Index (%)	AS 1289.3.3.1	55	
Date Tested		7/07/2021	

Comments

N/A

Appendix D Bulk Earthworks Drawings

- **Site Plan**
- **Long Sections A-A' and B-B'**
- **Long Sections C-C' and D-D'**

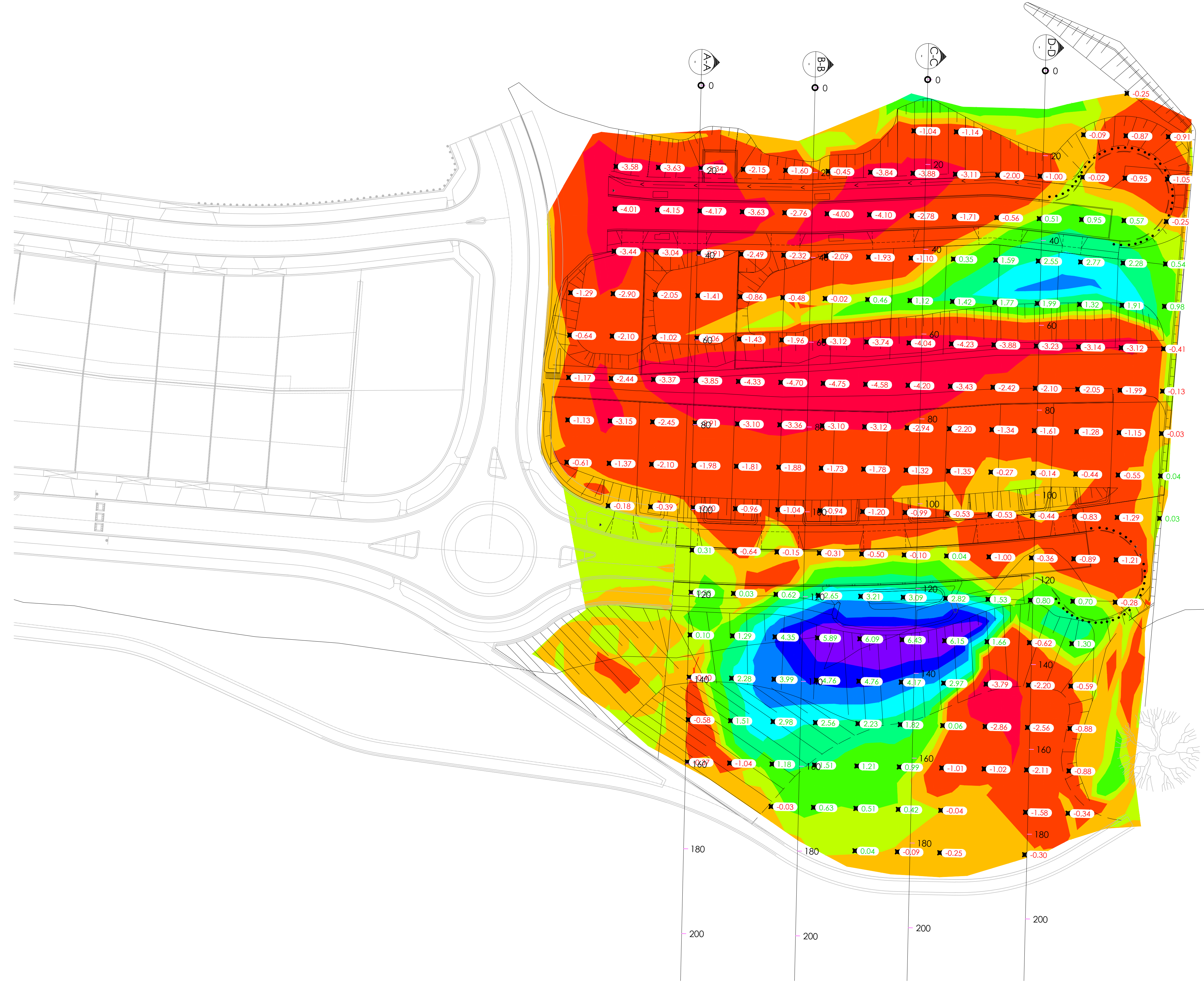
VOLUMETRIC ANALYSIS				
NUMBER	COLOUR	MIN ELEVATION (m)	MAX ELEVATION (m)	2D AREA (m ²)
1	Red	-5.841	-3.000	3147.6
2	Orange	-3.000	-0.500	9381.8
3	Yellow	-0.500	0.000	4092.8
4	Light Green	0.000	0.500	2458.2
5	Green	0.500	1.500	1686.6
6	Light Blue	1.500	2.500	993.2
7	Blue	2.500	3.500	722.6
8	Dark Blue	3.500	4.500	482.2
9	Very Dark Blue	4.500	5.500	325.2
10	Purple	5.500	6.630	312.4

BULK EARTHWORKS NOTES

THE APPROXIMATE SITE EARTHWORKS VOLUMES BASED ON THE AS-BUILT BULK EARTHWORKS SURFACE COMPARISON TO THE EXISTING NATURAL GROUND SURFACE ARE:

- VOLUME OF CUT: 27 358m³
- VOLUME OF REMAINING FILL: 11 540m³

VOLUMES REQUIRED TO ACHIEVE AS-BUILT BULK LEVELS



NO	DATE	BY	CHKD	REVISION
1	20.10.22	TS	VE	ISSUED FOR INFORMATION

Note for Contractors
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.

⚠️ **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.



SKETCHES

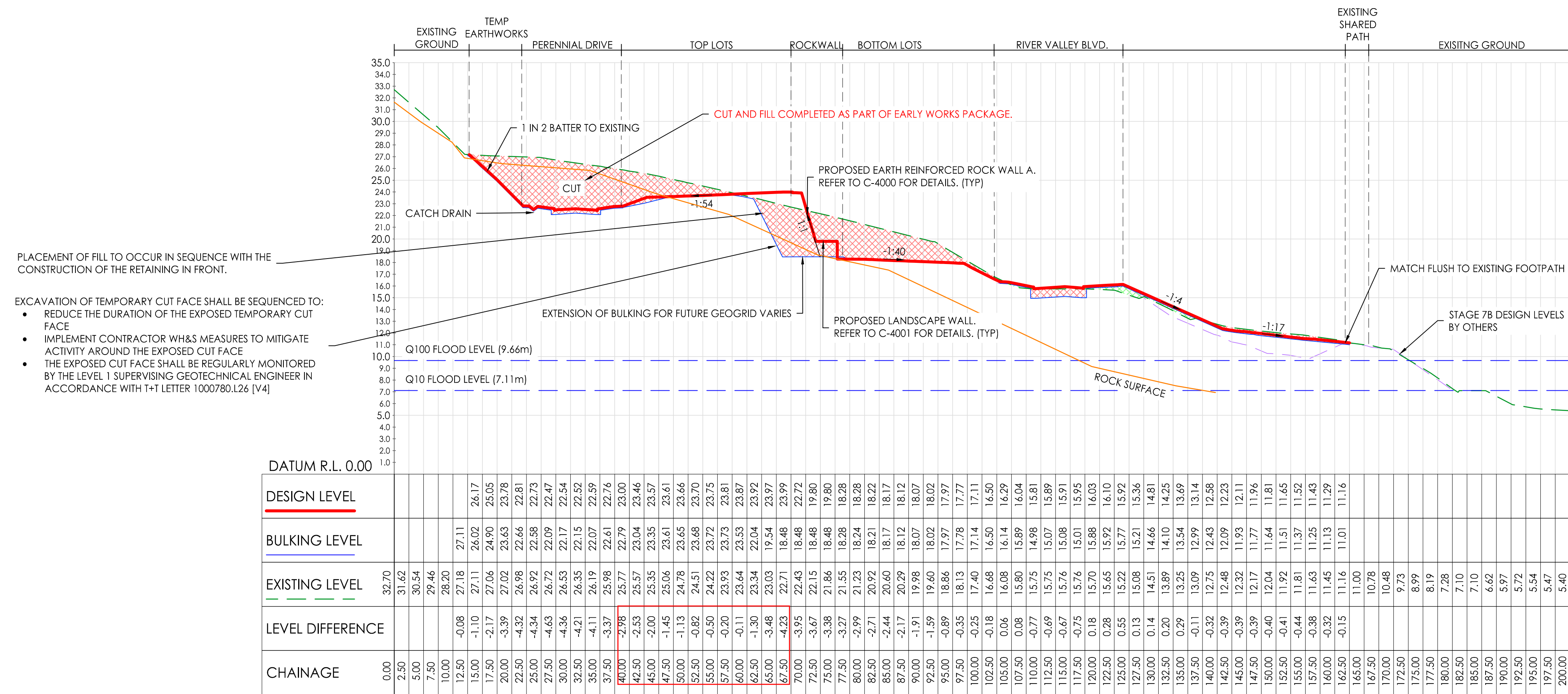
MELBOURNE
T: (03) 9583 2800 | E: info@cjarms.com | W: www.cjarms.com

Project: RIVER VALLEY - STAGE 7C
Client: YOURLAND
Drawing Title: VOLUME COMPARISON AS-BUILT BULK LEVEL VS EXISTING GROUND LEVEL

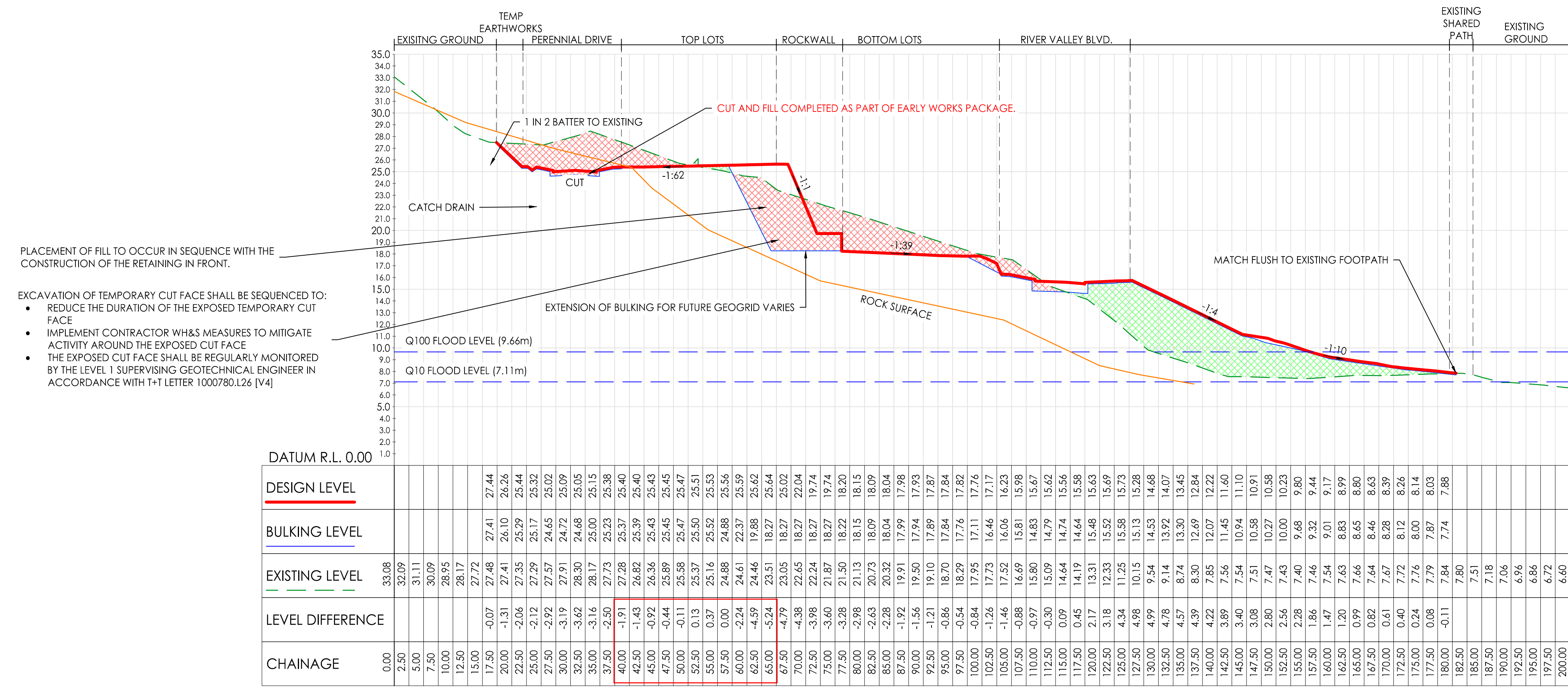
Drawn By: TS
Checked By: VE
Drawn Scale: 1:500 @ A1
Date of first issue: 20.10.22

Project Number	Origin	Zone	Level	File Type	Rev	Number	Revision
15019	CJA	7C	XX	SK	C	9502	P01

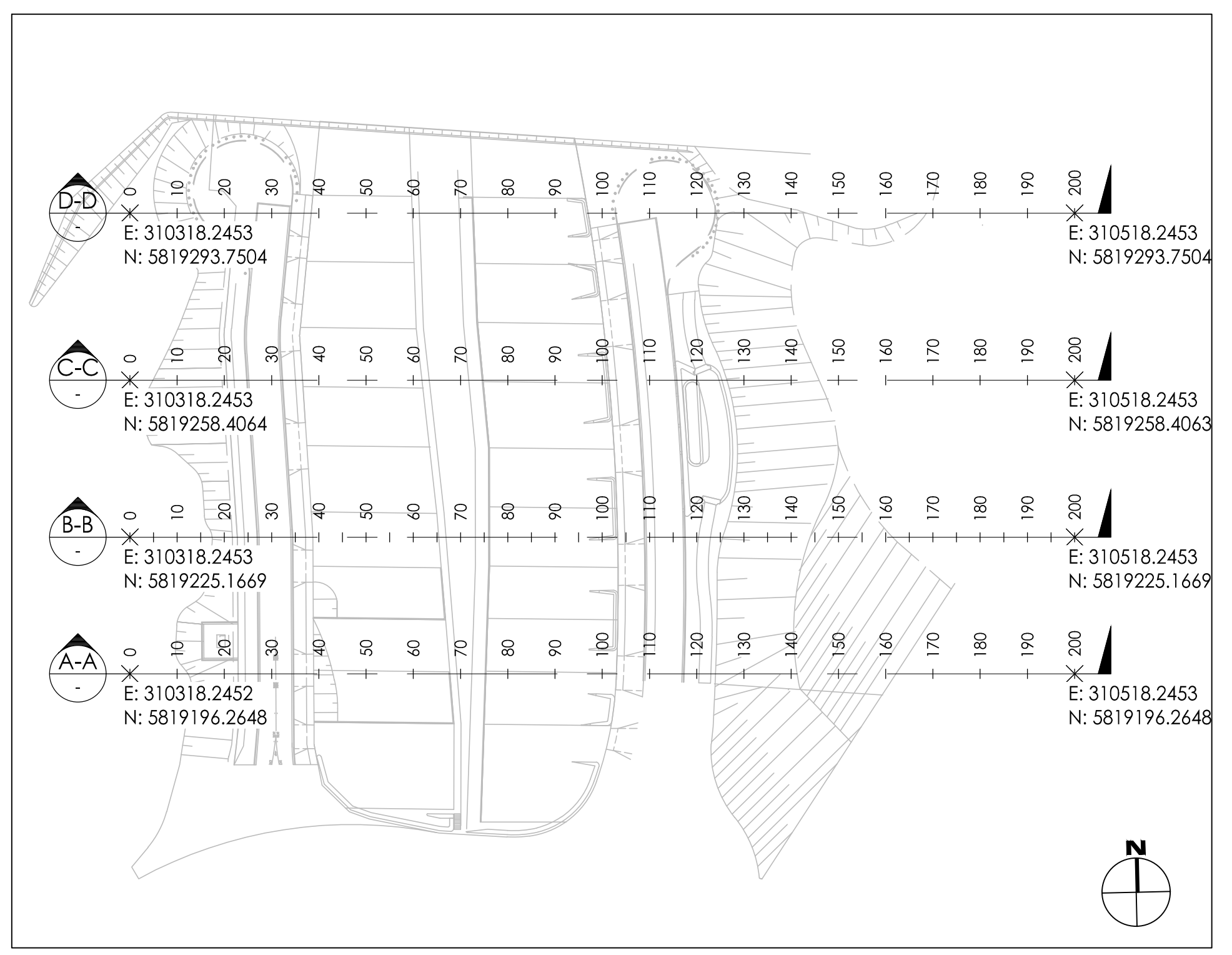
www.cjarms.com



A-A - LONG SECTION
 SCALES: HORIZONTAL 1:250 VERTICAL 1:125 (2x)



B-B - LONG SECTION
 SCALES: HORIZONTAL 1:250 VERTICAL 1:125 (2x)



KEY PLAN
 SCALE 1:1000

Note for Contractors
 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.

Dist 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.

BULK EARTHWORKS COMPLETED UNDER EARLY WORKS PACKAGE & APPROVAL. REFER ENDORSED EARLY WORKS PACKAGE FOR FURTHER INFORMATION.

SITE SECTIONS ARE PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY AND ARE NOT TO BE USED TO SET OUT THE WORKS.

ISSUED FOR CONSTRUCTION

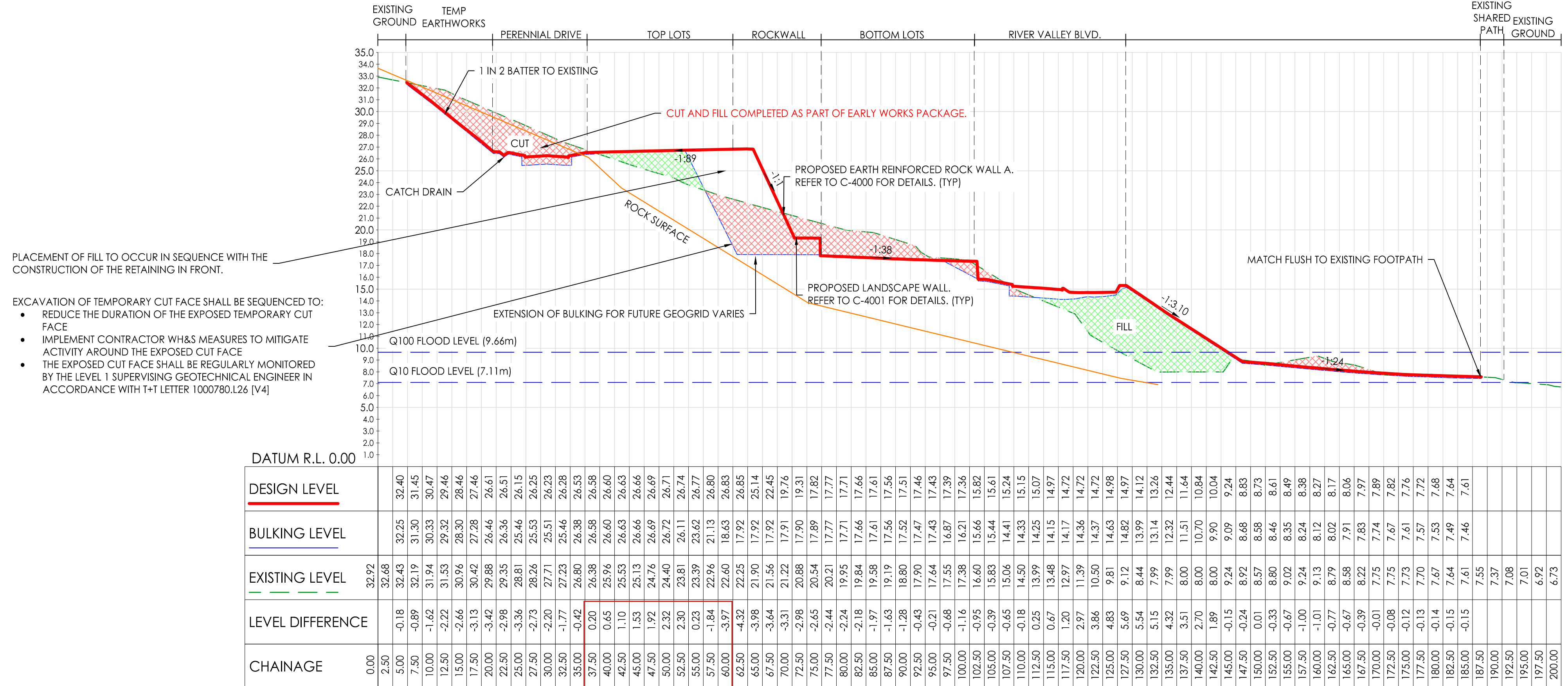


CIVIL SITEWORKS
 MELBOURNE
 T: (03) 938 2800 | E: info@cjarms.com | W: www.cjarms.com

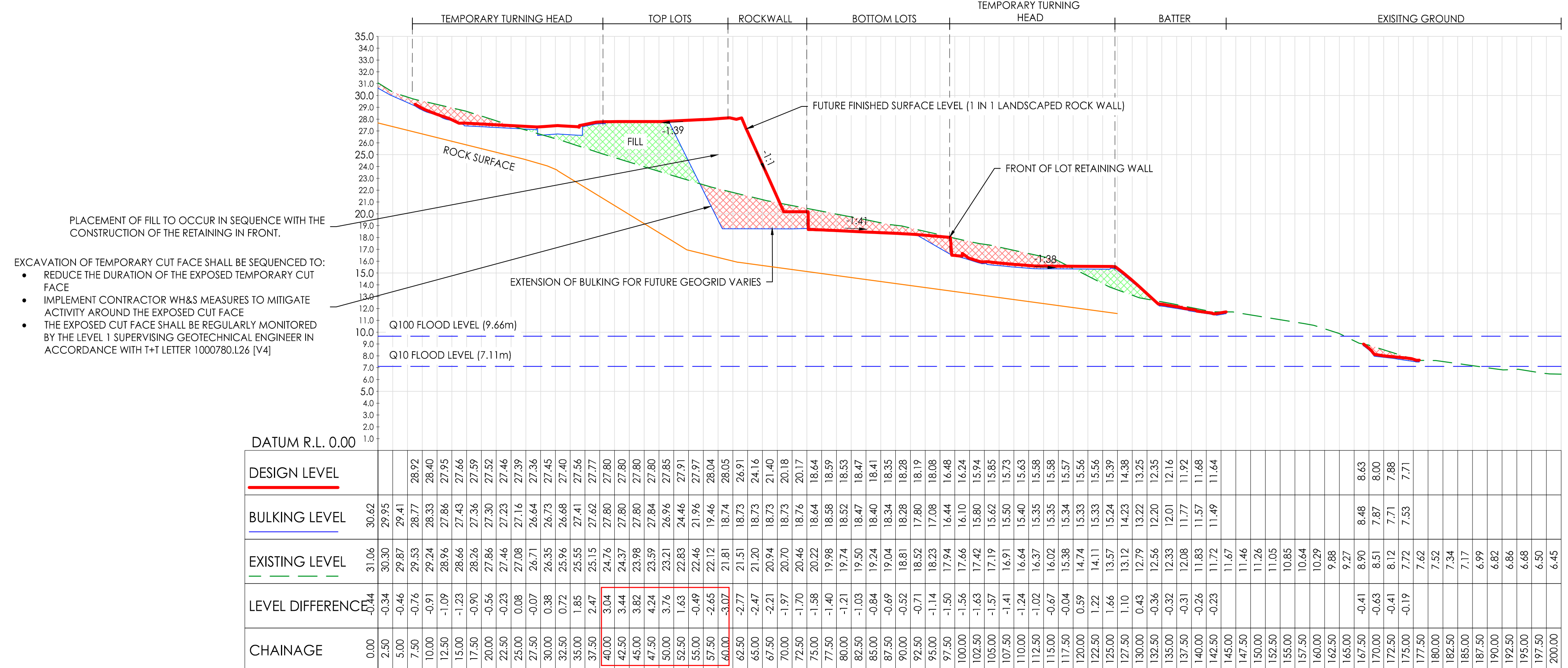
Project: RIVER VALLEY - STAGE 7C
 Client: YOURLAND
 Issue: ISSUED FOR CONSTRUCTION

Drawn By: JS
 Checked By: AK
 Date of Issue: 17/04/20

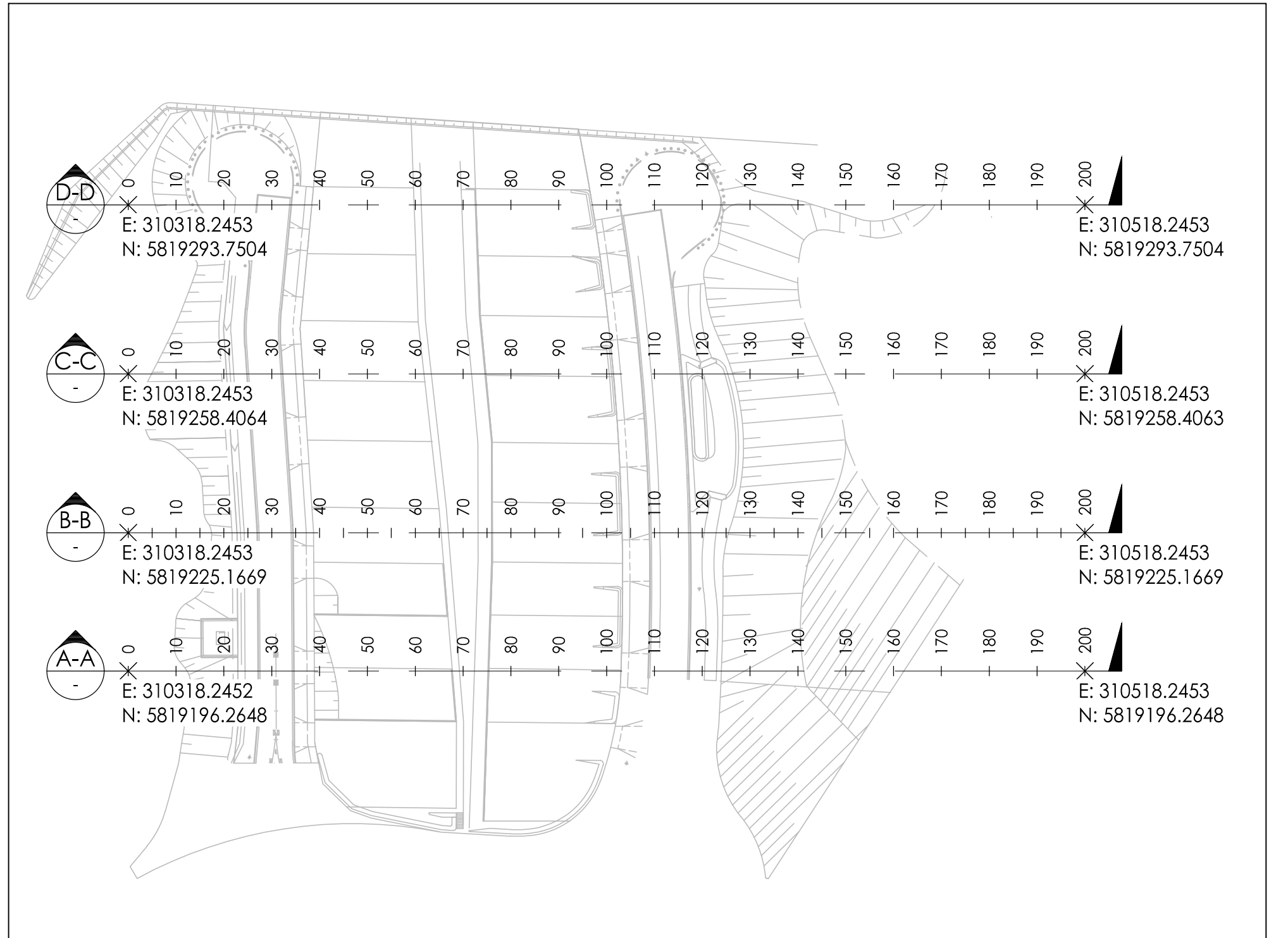
Project Number: 15019
 Design: CJA
 Stage: 7C
 Level: XX
 Ref Type: DR
 Role: C
 Number: 2100
 Revision: 0



C-C - LONG SECTION
 SCALES: HORIZONTAL 1:250 VERTICAL 1:125 (2x)



D-D - LONG SECTION
 SCALES: HORIZONTAL 1:250 VERTICAL 1:125 (2x)



KEY PLAN
 SCALE 1:1000

0	30.09.21	ISSUED FOR CONSTRUCTION	JSS	AK
Revision	Date	Reason	Drawn	Checked
1				

Note for Contractors
 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.

Deal 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.

BULK EARTHWORKS COMPLETED UNDER EARLY WORKS PACKAGE & APPROVAL. REFER ENDORSED EARLY WORKS PACKAGE FOR FURTHER INFORMATION.

SITE SECTIONS ARE PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY AND ARE NOT TO BE USED TO SET OUT THE WORKS.

ISSUED FOR CONSTRUCTION



CIVIL SITEWORKS
 MELBOURNE
 T: (03) 9382 2800 | E: info@cjarms.com | W: www.cjarms.com

Project: RIVER VALLEY - STAGE 7C
 Client: YOURLAND
 Title: ISSUED FOR CONSTRUCTION

Drawn By: JSS
 Checked By: AK
 Date of Issue: 17.04.20

Revision: 0

