Construction Sciences
a kiwa company

Bulk Earthworks
Works Inspection & Testing

22 BRYMER ST, CHAPEL HILL

Prepared for BMD Urban
Tuesday, 11th November 2025

Document Information	
Prepared for	BMD Urban
Proposal Name	22 Brymer St, Chapel Hill
Job Reference	1979/P/25-54
Date	Tuesday, 11th November 2025
Version Number	01

Contact Information	
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Mathew Tyrrell
Laboratory Manager
Effective date 11/11/2025

Dean Stimpson
Laboratory Supervisor
Date approved: 11/11/2025

DOCUMENT HISTORY

Version	Effective Date	Revision	Author	Reviewer	Recipient
01	11/11/2025	00	M. Tyrrell	D. Stimpson	BMD Urban

Contents

Appendices

1. Introduction & Scope of Works

Construction Sciences was commissioned by BMD Urban to carry out the geotechnical inspection and testing required for a proposed development at 22 Brymer St, Chapel Hill

Inspection and testing of the earthworks were carried out between the 09/07/2025 and the 23/07/2025.

Works on this development were monitored in accordance with the scope of our commission as follows: -

Level 1: Earthworks stripping and filling was inspected and tested on a Level 1 basis, in accordance with AS3798.

Scope of **Level 1** responsibility:

"The primary objective of Level 1 Inspection and Testing is for the geotechnical inspection and testing authority (GITA) to be able to express an opinion on the compliance of the work. The GITA is responsible for ensuring that the inspection and testing is sufficient for this purpose.

The GITA needs to have competent personnel on site at all times while earthwork operations are undertaken. Such operations include the following:

(a) Completion of removal of topsoil.
(b) Placing of imported or cut material.
(c) Compaction and adding/removal of moisture.
(d) Trenching and backfilling, where applicable.
(e) Test rolling.
(f) Testing.

The superintendent should agree on a suitable inspection and testing plan prior to the commencement of the works" - reference AS3798 Section 8.2

2. Specification Requirements

Earthworks on this development were inspected and tested in accordance with specification of the design engineer and to the specifications of the local authority, Brisbane City Council.

The following table is a summary of the basic compaction requirements for the project.

Testing procedures used to confirm that these requirements were met were all in accordance with Australian Standard test methods.

SPECIFICATIONS	
Item	Minimum Compaction Requirement
Earthworks Fill	95% Wet Density Ratio (*Minimum)*

3. Site Works – Bulk Earthworks

3.1 General

Site inspection was maintained in accordance with Level 1 requirements whilst earthworks were carried out.

Natural ground in the areas of filling generally comprised silty gravel with clay.

The material used in the bulk earthworks filling was site won.

3.2 Compaction Control Testing

Compaction control testing via the Nuclear Densometer method was carried out at regular intervals throughout the placement of fill, in accordance with the minimum test frequency recommendations included in AS3798 “Guidelines on Earthworks for Commercial and Residential Developments”.

A total of six (6) field density tests were carried out during the earthworks. The average density ratio was recorded to be 97.5%

Approximate field density test locations are marked on attached sketch SK-01 included in Appendix B.

Progressive photographs taken during the bulk earthworks’ operations are included in Appendix A.

4. Conclusion

We confirm that:

(a) Our representative was in site attendance whilst earthworks filling was in progress between the 09/07/2025 and the 23/07/2025.

(b) Pre – fill ground preparation was carried out in accordance with the specifications and site instruction given.

(c) The structural filling placed to design levels during the term of our engagement on a “Level 1” basis can be termed “controlled filling”.

(d) The results of the compaction control testing indicate that the fill placed during the term of our site attendance, was compacted to at least the minimum specified density ratio.

(e) All test results pertaining to the bulk earthworks are included within Appendix B of this report.

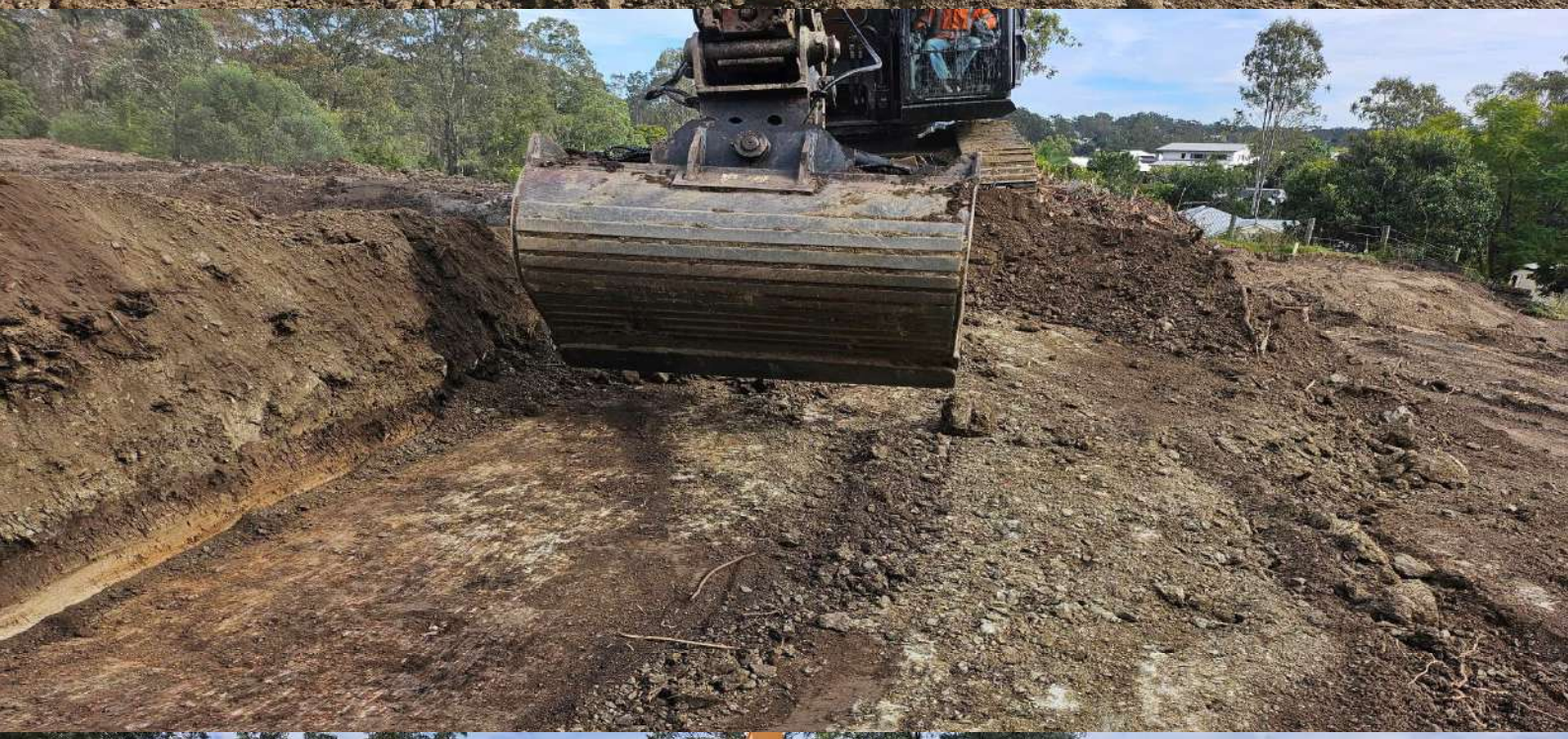
(f) All Lot Certificates pertaining to the bulk earthworks are included within Appendix C of this report.

Yours faithfully,

Mathew Tyrrell,

Laboratory Manager
for Construction Sciences, Brisbane South.

Appendix A
Site Works Photographs



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SITE WORKS PHOTOGRAPHS

CLIENT NAME	BMD URBAN	PROJECT NO.	P25-54
PROJECT NAME	22 BRYMER STREET, CHAPEL HILL	ISSUE DATE	OCT 2025

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SITE WORKS PHOTOGRAPHS

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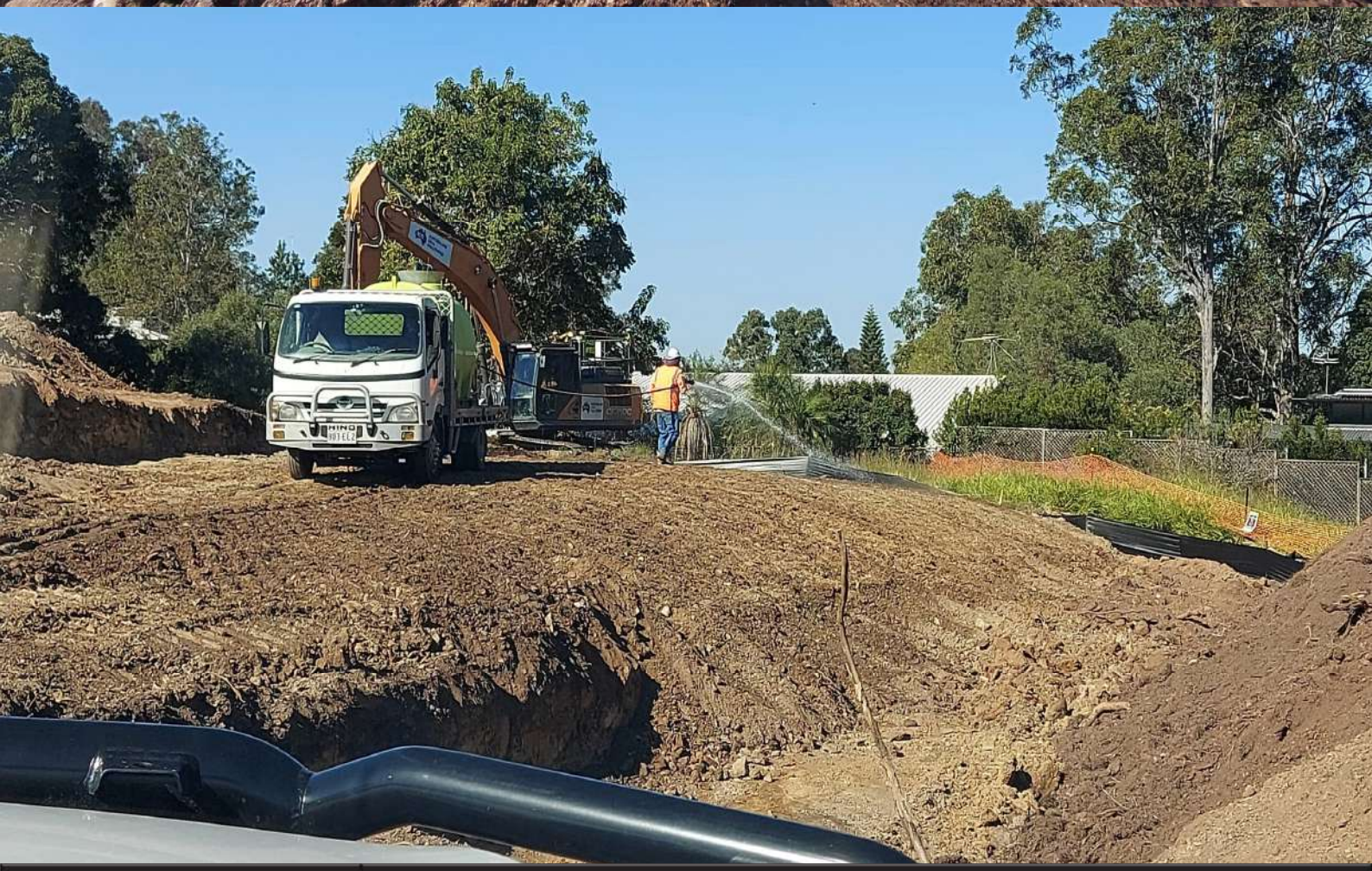

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SITE WORKS PHOTOGRAPHS

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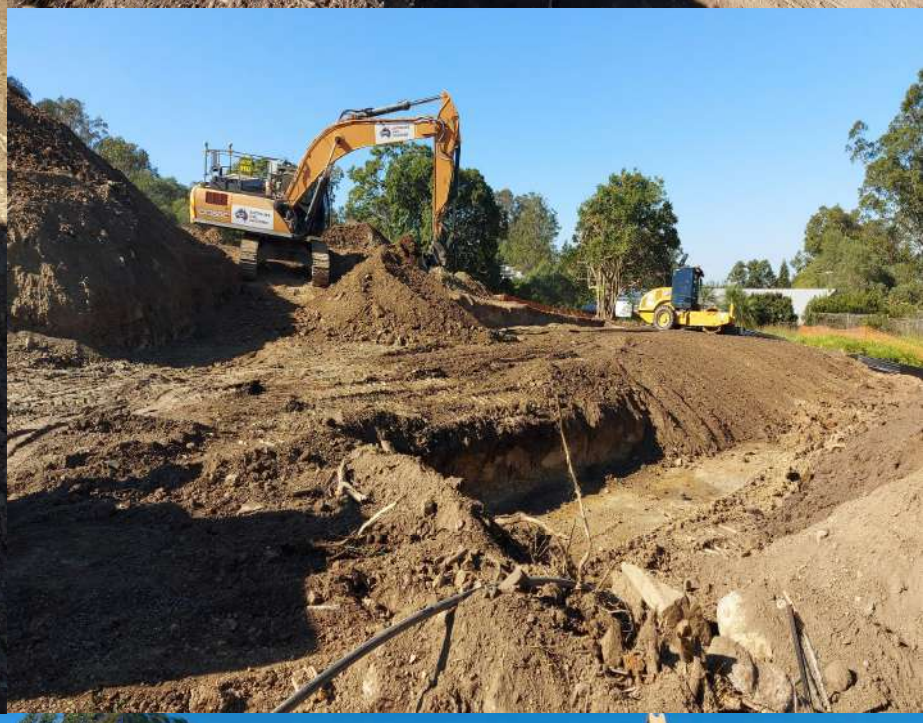

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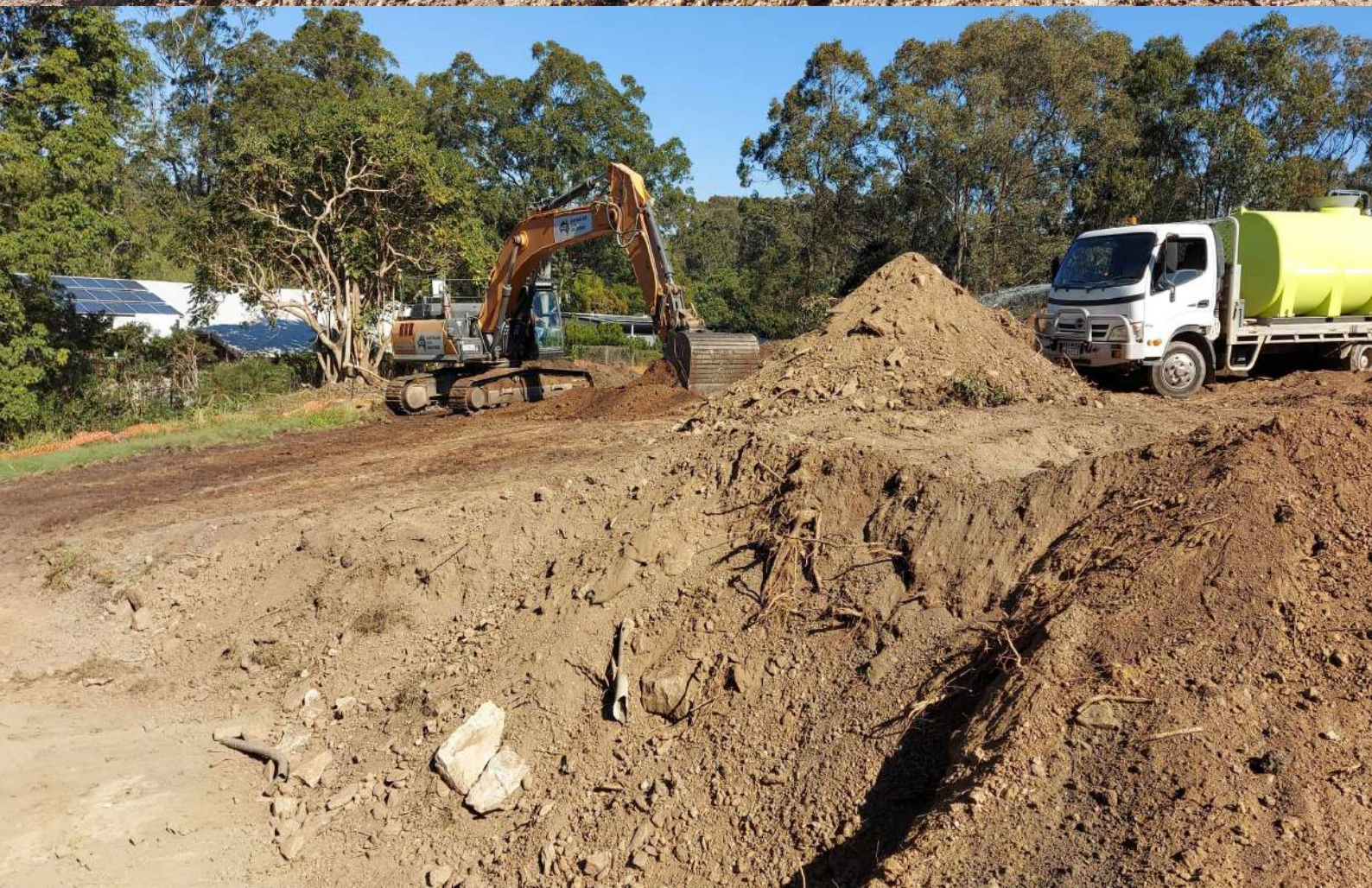

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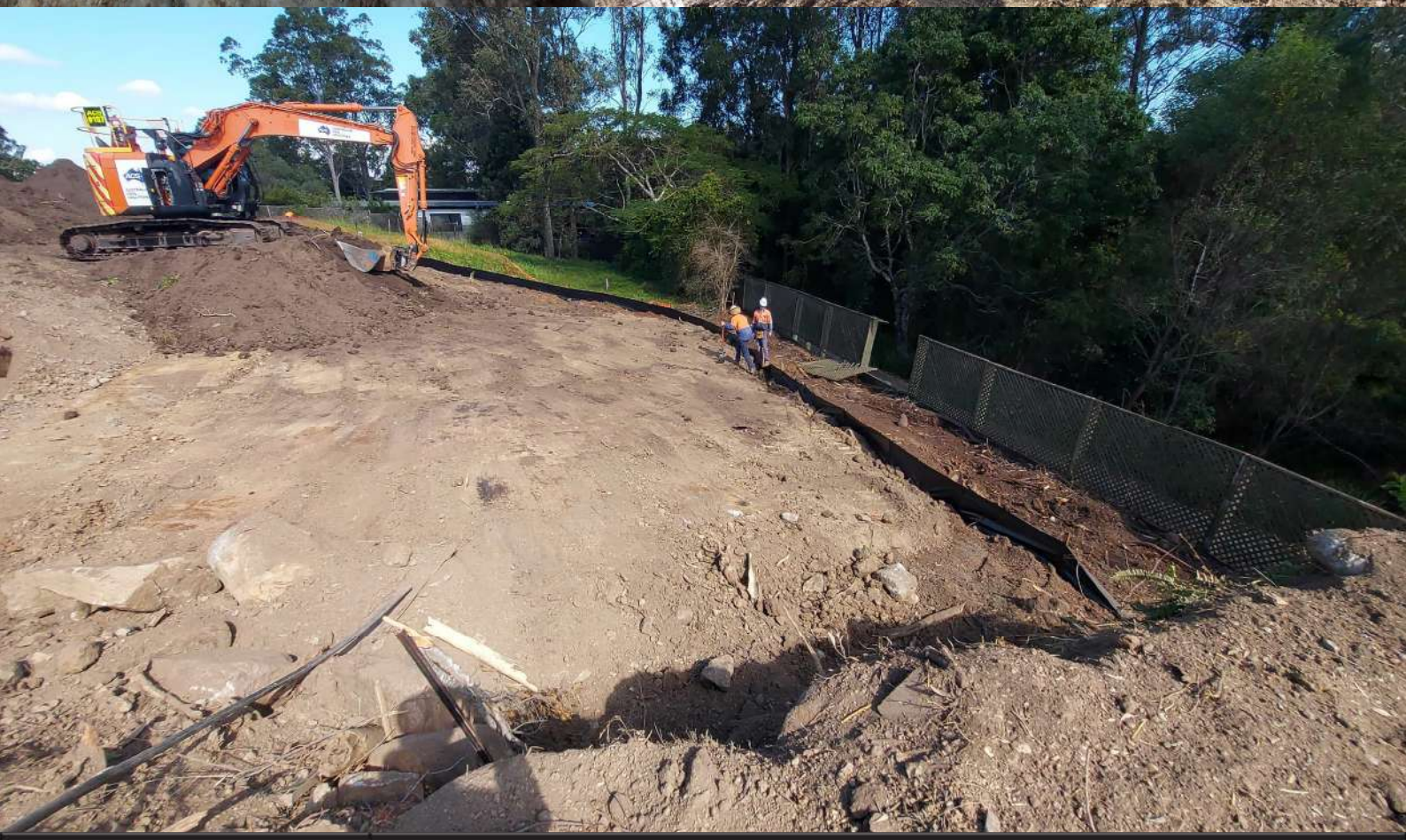

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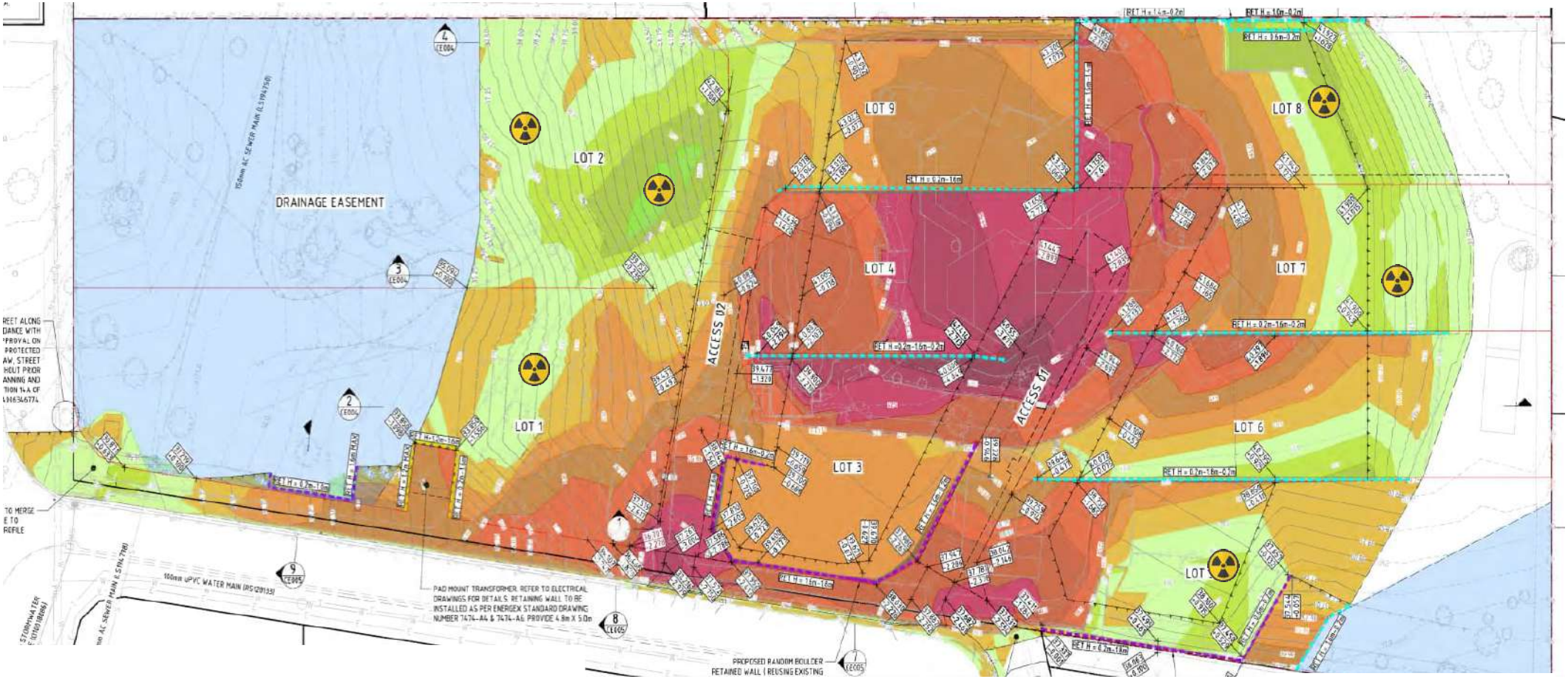
Appendix B
Bulk Earthworks



EARTHWORKS DEPTH RANGE

tin EXISTING-100mm TO tin DESIGN-100mm (0.50m INTERVALS)

FILL 3.50m +	CUT 0.00m - 0.50m
FILL 3.00m - 3.50m	CUT 0.50m - 1.00m
FILL 2.50m - 3.00m	CUT 1.00m - 1.50m
FILL 2.00m - 2.50m	CUT 1.50m - 2.00m
FILL 1.50m - 2.00m	CUT 2.00m - 2.50m
FILL 1.00m - 1.50m	CUT 2.50m - 3.00m
FILL 0.50m - 1.00m	CUT 3.00m - 3.50m
FILL 0.00m - 0.50m	CUT 3.50m +

DENOTES APPROX. FIELD DENSITY TEST LOCATION

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BULK EARTHWORKS

CLIENT NAME	BMD URBAN	PROJECT NO.	P25-54
PROJECT NAME	22 BRYMER STREET, CHAPEL HILL	SKETCH NO.	SK01
		ISSUE DATE	OCT 2025

Construction Sciences
a kiwa company

Construction Sciences Pty Ltd
ABN: 74 128 806 735

Address:
57 Mudgee Street,
Kingston QLD 4114

Laboratory: **Brisbane South Laboratory**
Phone: 1300 165 769
Fax:
Email: Brisbane@constructionsciences.net

WET DENSITY RATIO REPORT

Client:	BMD Urban Pty Ltd	Report Number:	1979/R/25-22406-1
Client Address:	PO Box 197, WYNNUM	Project Number:	1979/P/25-54
Project:	22 Brymer Street, Chapel Hill	Lot Number:	
Location:	Chapel Hill	Internal Test Request:	1979/T/25-10418
Supplied To:	n/a	Client Reference/s:	WR013601
Area Description:		Report Date / Page:	14/07/2025 Page 1 of 1

Test Procedures:	AS1289.5.7.1, AS1289.1.1, AS1289.5.8.1, AS1289.2.1.1

Sample Number	1979/S/25-58627	1979/S/25-58628	1979/S/25-58629	
ID / Client ID	-	-	-	
Lot Number	-	-	-	
Date / Time Tested	10/07/2025 13:22	10/07/2025 13:37	10/07/2025 13:44	
Material Source	On-Site	On-Site	On-Site	
Material Type	General Fill	General Fill	General Fill	
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	
Standard or Modified	Standard	Standard	Standard	
Easting m	494963	494972	494963	
Northing m	6958129	6958117	6958110	
RL m	FL	FL	FL	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	7	10	5	
Compaction Sample Number	1979/S/25-58627	1979/S/25-58628	1979/S/25-58629	
Sample Description	Gravelly Clay	Gravelly Clay	Gravelly Clay	
Moisture Test Results:				
Field Moisture Content (%)	11.0	14.0	10.1	
Adjusted / Moist. Variation (%)	**2.0**	**-0.5**	**1.5**	
Optimum Moisture Content (%)	13.0	13.5	12.0	
Moisture Variation from OMC	(Drier than OMC)	(Wetter than OMC)	(Drier than OMC)	
Moisture Ratio (%)	**84.5**	**105.0**	**85.5**	
Density Test Results:				
Field Wet Density (t/m³)	2.14	2.13	2.15	
Field Dry Density (t/m³)	1.93	1.87	1.95	
Adj/Peak Conv Wet Density (t/m³)	2.16	2.24	2.21	
Density Ratio Required (%)	95	95	95	
Hilf Density Ratio (%)	**99.5**	**95.0**	**97.5**	

(Moisture Ratio = (100 x Field Moisture Content) / Optimum Moisture Content. Moisture Ratio calculation not covered by NATA endorsement)

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing

NATA

Accreditation Number: 1986
Corporate Site Number: 1979

Approved Signatory: Dean Stimpson
Form ID: W5ASMRRep Rev 2

Construction Sciences
a kiwa company

Construction Sciences Pty Ltd
ABN: 74 128 806 735

Address:
57 Mudgee Street,
Kingston QLD 4114

Laboratory: **Brisbane South Laboratory**
Phone: 1300 165 769
Fax:
Email: Brisbane@constructionsciences.net

WET DENSITY RATIO REPORT

Client:	BMD Urban Pty Ltd	Report Number:	1979/R/25-23867-1
Client Address:	PO Box 197, WYNNUM	Project Number:	1979/P/25-54
Project:	22 Brymer Street, Chapel Hill	Lot Number:	
Location:	Chapel Hill	Internal Test Request:	1979/T/25-11031
Component:	Level 1 Supervision with field density testing	Client Reference/s:	WR013802
Area Description:	L6 to 8	Report Date / Page:	23/07/2025 Page 1 of 1

Test Procedures:	AS1289.5.7.1, AS1289.1.1, AS1289.5.8.1, AS1289.2.1.1

Sample Number		1979/S/25-61683	1979/S/25-61684	1979/S/25-61685	
ID / Client ID		-	-	-	
Lot Number		-	-	-	
Date / Time Tested		17/07/2025 12:55	17/07/2025 13:05	17/07/2025 13:15	
Material Source		On-Site	On-Site	On-Site	
Material Type		General Fill	General Fill	General Fill	
Sampling Method		AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	
Depths: Test / Nom / Actual (mm)		175 / 200 / 200	175 / 200 / 200	175 / 200 / 200	
Standard or Modified		Standard	Standard	Standard	
Easting:	m	5012.788	5022.768	5034.641	
Northing	m	4849.240	4850.496	4852.719	
RL:	m	40.30	41.74	41.88	
Allotment:		6	7	8	
Test Fraction (mm)		< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)		14	2	4	
Compaction Sample Number		1979/S/25-61683	1979/S/25-61684	1979/S/25-61685	
Sample Description		Silty Gravel Brown	Silty Gravel Brown	Silty Gravel Brown	
Moisture Test Results:					
Field Moisture Content (%)		10.1	8.6	9.8	
Adjusted / Moist. Variation (%)		**1.5**	**2.0**	**0.0**	
Optimum Moisture Content (%)		12.0	11.0	10.0	
Moisture Variation from OMC		(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	
Moisture Ratio (%)		**84.0**	**79.5**	**98.5**	
Density Test Results:					
Field Wet Density (t/m³)		2.25	2.07	2.21	
Field Dry Density (t/m³)		2.05	1.90	2.01	
Adj/Peak Conv Wet Density (t/m³)		2.26	2.14	2.26	
Density Ratio Required (%)		95	95	95	
Hilf Density Ratio (%)		**99.5**	**96.5**	**97.5**	

(Moisture Ratio = (100 x Field Moisture Content) / Optimum Moisture Content. Moisture Ratio calculation not covered by NATA endorsement)

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing

NATA

Accreditation Number: 1986
Corporate Site Number: 1979

Approved Signatory: Dean Stimpson
Form ID: W5ASMRRep Rev 2

Appendix C
Lot Certificates

Construction Sciences Pty Ltd

ABN 74 128 806 735
Ph +61 7 2800 6500
57 Mudgee Street, Kingston QLD 4114

Project Ref: 1979/P/25-54

29/10/2025

BMD Urban Pty Ltd
PO BOX 197,
WYNNUM QLD 4178

Dear BMD Urban,

RE: INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
Lot 1, 22 Brymer Street, Chapel Hill QLD 4069

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

It may be that non-structural topsoil was placed on the block after completion of the structural fill. This would need to be removed as part of the site preparation for building and driveway construction.

I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Regards,

Mathew Tyrrell
Laboratory Manager
for Construction Sciences

Construction Sciences Pty Ltd

ABN 74 128 806 735
Ph +61 7 2800 6500
57 Mudgee Street, Kingston QLD 4114

Project Ref: 1979/P/25-54

29/10/2025

BMD Urban Pty Ltd
PO BOX 197,
WYNNUM QLD 4178

Dear BMD Urban,

RE: INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
Lot 2, 22 Brymer Street, Chapel Hill QLD 4069

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

It may be that non-structural topsoil was placed on the block after completion of the structural fill. This would need to be removed as part of the site preparation for building and driveway construction.

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Regards,

Mathew Tyrrell
Laboratory Manager
for Construction Sciences

Construction Sciences Pty Ltd

ABN 74 128 806 735
Ph +61 7 2800 6500
57 Mudgee Street, Kingston QLD 4114

Project Ref: 1979/P/25-54

29/10/2025

BMD Urban Pty Ltd
PO BOX 197,
WYNNUM QLD 4178

Dear BMD Urban,

RE: INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
Lot 5, 22 Brymer Street, Chapel Hill QLD 4069

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

It may be that non-structural topsoil was placed on the block after completion of the structural fill. This would need to be removed as part of the site preparation for building and driveway construction.

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Regards,

Mathew Tyrrell
Laboratory Manager
for Construction Sciences

Construction Sciences Pty Ltd

ABN 74 128 806 735
Ph +61 7 2800 6500
57 Mudgee Street, Kingston QLD 4114

Project Ref: 1979/P/25-54

29/10/2025

BMD Urban Pty Ltd
PO BOX 197,
WYNNUM QLD 4178

Dear BMD Urban,

RE: INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
Lot 6, 22 Brymer Street, Chapel Hill QLD 4069

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Regards,

Mathew Tyrrell
Laboratory Manager
for Construction Sciences

Construction Sciences Pty Ltd

ABN 74 128 806 735
Ph +61 7 2800 6500
57 Mudgee Street, Kingston QLD 4114

Project Ref: 1979/P/25-54

29/10/2025

BMD Urban Pty Ltd
PO BOX 197,
WYNNUM QLD 4178

Dear BMD Urban,

RE: INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
Lot 7, 22 Brymer Street, Chapel Hill QLD 4069

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

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Regards,

Mathew Tyrrell
Laboratory Manager
for Construction Sciences

Construction Sciences Pty Ltd

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Ph +61 7 2800 6500
57 Mudgee Street, Kingston QLD 4114

Project Ref: 1979/P/25-54

29/10/2025

BMD Urban Pty Ltd
PO BOX 197,
WYNNUM QLD 4178

Dear BMD Urban,

RE: INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
Lot 8, 22 Brymer Street, Chapel Hill QLD 4069

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Regards,

Mathew Tyrrell
Laboratory Manager
for Construction Sciences

Located across Australia and New Zealand

QLD
Airlie
Beenleigh
Brisbane (Acacia Ridge)
Brisbane (Beenleigh)
Brisbane (Brendale)
Brisbane (Petrie)
Cairns
Emerald
Gladstone
Gold Coast
Mackay
Moranbah
Rockhampton
Petrie
Sunshine Coast
Toowoomba
Townsville

NSW
Ballina
Coffs Harbour
Grafton
Lynwood
Newcastle
Sydney (Glendenning)
Sydney (Seven Hills)
Sydney (St Peters)
Taree
Wollongong

VIC
Ararat
Bendigo
Echuca
Melbourne (Chadstone)
Melbourne (Keysborough)
Melbourne (Pakenham)
Melbourne (Oaklands Junction)
Melbourne (Sunshine West)
Traralgon

WA
Bunbury
Kalgoorlie
Newman
Perth
Port Hedland

SA
Adelaide
Port Augusta

NT
Darwin

ACT
Canberra

NZ
Wellington

Ph 1300 165 769 E info@constructionsciences.net W constructionsciences.net

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