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Stage 11 Allotments

The Heights, Durack

LEVEL 1 REPORT

BMD Urban


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1.0 INTRODUCTION

CMW Geosciences (CMW) was commissioned by BMD Urban to provide Level 1 inspection, supervision and testing services for Stage 11 Allotments in The Heights, Durack as shown in the earthworks site map in **Figure 1** and attached as Appendix A, in accordance with AS3798-2007 'Guidelines on earthworks for commercial and residential developments' for the placement of fill.

The client requires this assessment for the proposed subdivision subgrade foundations of Stage 11 Allotments. It is understood that this development consists of 36 lots, with street access via three roads. Drawing set 8120-The Heights Stage 11-20240808 - IFC - Earthwork Drgs was provided, alongside the standard subdivision guidelines for NT and the project specific amendments - 7.1.1.c-B00611-The Heights Stage 11 - Specification - Project Specific Amendments - Subdivision Works.

Supervision and testing for the earthworks occurred from 22/08/2024 to 25/10/2024, with the Level 1 supervision only applicable to the subdivision lots, with fill below pavement layers being tested under the direction of the client (Level 2 Testing). The scope of work and associated terms and conditions of our engagement were detailed in our services proposal letter referenced DAR2024 – 0061AA, Rev 0 dated 14/08/2024 and enclosed in the Construction Sciences Proposal 21791_Q_316_BMD Constructions Pty Ltd.

The client requires this assessment for the proposed buildings at the Stage 11 Allotments as highlighted in the aerial image in **Figure 1** below.

Figure 1: Stage 11 Allotments Site Location



1.1 Project Commencement/Provided Documentation

1.2 Previous Works/Provided Geotechnical Information

CMW has been provided documents relating to the previous development within the site prior to the current earthworks which consisted of a Level 1 report of the earthworks that was carried out from 16/06/2016 to 08/09/2016. The Level 1 earthworks and supervision was completed by Construction Sciences (then Cardno Bowler), 21791-P-303 *The Heights Stage 11 Level 1*. A check through historical satellite imagery has provided an indication that no previous earthworks occurred until 2014.. It is important to note that the historical Level 1 had been only partially completed, with the works being postponed until 2024.

It is expected that the client completes due diligence to determine if any previous structures or earthworks had occurred prior. Figure 2 below outlines the various stages of development between 2015 and 2023, where it can be seen that the site was left for a period of ~5 years without adequate drainage, and vegetation was allowed to regrow throughout.

Figure 2: Historical Imagery (Nearmap, 2014, 2015, 2017, 2023)



Volume of total fill was not provided by the client; however, the total area of the lots is estimated to be ~20,000m², with the lots ranging from 303m² to 1060m², with the cut and fill depths and heights ranging from -0.5m to +1.75m.

No previous geotechnical report has been provided for Stage 11, and as such the site classification is not known at this point. The geotechnical report titled *NTG20222840 BMD The Heights Durack Ground Investigation Report Rev 0* was provided; however, this only incorporated the future stages of the development.

1.3 Specification Requirements

Filling was carried out in accordance with AS3798-2007, 7.1.1.b - B00611 - *The Heights Stage 11 - Specification - Standard Specifications* and with the specifications prepared for the project.

The specification requirements included the need that all fill was to be placed and compacted in layers not exceeding **250mm** loose to a density ratio of not less than **95%** of the maximum dry density as determined by AS1289.5.2.1 (**Modified** compaction).

A summary of the site material specifications, including various tests, that is to be conformed to is included in **Table 1** below. The material required for fill placement in the allotments was General Fill.

Table 1: Summary of specification requirements

Material Type	Test type	Conformance Minimum	Conformance Maximum
In situ Subgrade	Proof roll	No deflection	-
General Fill	Maximum particle size (mm)	-	75
	Plasticity Index (%)	-	55
	95% MMDD CBR (%)	5	-
	MMDD (%)	95	-
Standard Fill	Maximum particle size (mm) (subgrade)	-	50
	Plasticity Index (%)	2	15
	95% MMDD CBR (%)	5	-
	MMDD (%)	95	-
Select Fill	PP 75mm (%)	-	100
	PP 9.5mm (%)	30	100
	PP 2.36mm (%)	15	65
	PP 0.075 mm (%)	5	25
	Liquid Limit (%)	-	-
	Plasticity Index (%)	2	25
	Linear Shrinkage (%)	2	6
	95% MMDD CBR (%)	15	-
MMDD (%)	95	-	

Notes

- a. PP – Percent Passing for Particle Size Distribution Test

Volume of testing was applied based on the requirements of AS3798 and *Table 5-1 - Test Frequencies For Soils from Standard Specification for Subdivisions Part 4*, with consultation with the client during the earthworks program.

2.0 SUBGRADE PREPARATION

Subgrade preparation included the clearing and removal of topsoil, organics and other deleterious or unsuitable materials.

AS3798 outlines the subgrade preparation to generally include the need for adequate stripping of the site, with no evidence of significant root matter or deleterious organic materials observed to remain post stripping. Generally, this process also includes the removal of:

- Topsoils or organic soils, including severely root affected subsoils.
- Contaminated materials (PFAS, Hydrocarbons, agricultural use, etc.) if present.
- Low or non-plastic silts with dispersive or deleterious properties.
- Uncontrolled fill or fill material that contains deleterious anthropogenic materials (i.e. wood, steel, bricks, plastic). This does not include approved recycled fill materials such as concrete.
- Weak, reactive or moisture softened subgrade materials (may be seasonal, i.e. wet season/dry season, fluctuating water table).

2.1 Topsoil Strip & Unsuitable Material Removal

A CMW Geotechnical Engineer supervised and inspected the removal of topsoil, roots and other deleterious materials. An example of roots directed for removal can be seen in **Figure 3** below.

Figure 3: Minor Surficial Roots and Organics



A number of inspections (~19/08/2024) occurred during the topsoil strip, with the Geotechnical Engineer approving the surface via proof rolling and inspection by the engineer (see Section 2.3) after a nominal ~150mm strip. It is important to note that minor vegetation was observed given that the majority was from recent regrowth. The surface stripped to is considered part of the initial Level 1 earthworks completed in 2016 and was considered suitable for foundation of fill placement.

2.2 Subgrade Assessment

Specific reference to *4.2.3 Excavation and Subgrade Preparation* is provided in the assessment of subgrade.

The subgrade assessment was undertaken via an onsite inspection by the Geotechnical Engineer on and after 19/08/2024, with stripping occurring from 19/08/2024 – 22/08/2024. After the stripping works outlined in Section 2.1, the surface was proof rolled and insitu density testing was undertaken if the surface was ripped and remediated (recompacted), subsequently confirming that the surface was suitable for the placement of fill. The site visit records included photos and are attached in Appendix B.

Figure 4 below shows an overview of the site during the time of subgrade assessment.

Figure 4: Site overview at Subgrade post-strip



2.3 Proof Rolling

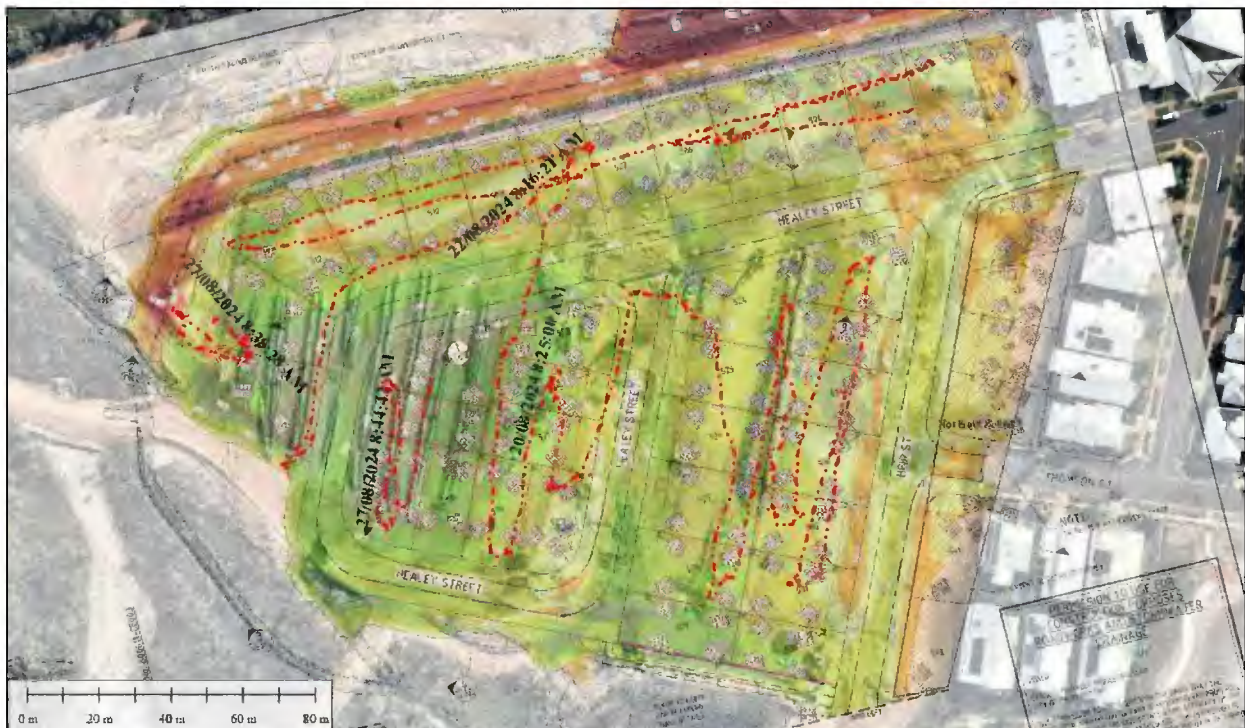
Proof rolling was undertaken on the subgrade, supervised by the inspecting Geotechnical Engineer. Proof rolling of the subgrade and subsequent layers was visually assessed while tracked with a fully laden water cart. Proof rolling was deemed satisfactory when no visible deflection was observed over the entire area proof rolled. **Figure 5** below shows typical site conditions during the post-strip proof roll on 22/08/2024.

Figure 5: Post Strip area for proof roll



Proof rolling was undertaken on the prepared foundation over multiple days once areas were ready. Figure 6 outlines the proof rolling undertaken across the site. Proof rolling was considered to pass in all lot areas subject to inspection.

Figure 6: Proof Rolling (dotted red lines)



Final proof rolling was assessed with rollers on the surface of the Level 1 placed fill for each lot at completion, with at least a single pass of the entire area undertaken. No deflection was observed, and the surface was deemed suitable for the subsequent filling works.

3.0 FILL PLACEMENT AND CONFORMANCE

3.1 Quality Testing

Imported material was approved for use with the majority of the fill sourced from a borrow pit adjacent to the north of the site (See Figure 7). The material was observed to be a highly to moderately weathered, low strength Meta-Siltstone, which was generally recovered as a gravelly clayey SAND. It was observed that the material was quite variable, however given the wide parameters for general fill, it was observed to be adequate.

Figure 7: Borrow Pit Locations



The provided specification required General Fill to meet **95%** Modified compaction. General Fill required a California Bearing Ratio (CBR) of **20%**, and a maximum Plasticity Index (PI) of **15%**, minimum **2%**. The material used was imported fill from off site for Layers 2-6. The results of quality testing are provided below in **Table 2**, with the material sourced from offsite being of a suitable PI range, and an adequate CBR value.

Table 2 below provides the conformance results for the imported general fill, which was generally a Gravelly Clayey SAND.

Table 2: General Fill Conformance Quality Results

Sample Number	Sample Date	Moisture	CBR	CBR Swell	Liquid Limit	Linear Shrinkage	Plastic Limit	Plastic Index	PP 75	PP 19.0	PP 2.36	PP 0.425	PP 0.075
21791/S/160082	23/04/2024 0:00	-0.2	50	1	24	5.5	16	8		96	64	48	30
21791/S/160515	5/02/2024	0	35	0						100	69	56	34
21791/S/160675	5/07/2024	0	30	0	31	6	18	13					
21791/S/160789	5/08/2024	-0.5	60	0	32	6	19	13		98	62	48	32
21791/S/161049	5/10/2024	1.8	20	2									
21791/S/167215	8/12/2024		25	0.5									
21791/S/167217	8/12/2024		30	0.5	29	5	20	9		100	61	47	34
21791/S/167260	8/12/2024	-2.3	30	0.5	29	6	19	10		100	68	52	34
21791/S/167511	15/08/2024 0:00	-0.2	20	1.5	34	6	20	14		100	69	54	38
Average		-0.2	30.5	0.9	29.8	5.8	18.7	11.2		99.0	65.5	50.8	33.7

* Not used

Green indicates passing the required specification, red indicates a non-conformance.

TR – Test Request

PP – Percent Passing

3.2 Compaction Control Testing

Compaction control tests were carried out during compaction of the subgrade and at regular intervals throughout the placement of subsequent fill layers in accordance with the minimum test frequency recommendations included in AS3798-2007 and the provided specification. Up to 7 lifts were observed, which encompassed the compacted subgrade and the compacted general fill layers.

A summary of compaction testing results is included in **Appendix C** and **Table 3** below. The average density ratio for the 80 field density tests of the Level 1 fill is **98.13% modified, standard deviation of 2.03%** with the required compaction of 95% modified considered achieved. It was observed that **5** highlighted modified dry density ratios on the subgrade were lower than the required 95%, either the average of the lot (minimum 3 tests) were conforming, or the surface was ripped, recompacted and retested with resulting conforming results. Red text is considered a non-conformance, green is considered conforming, and orange is considered a minor non-conformance, but confirmed to be conforming following additional retesting.

Table 3: Compaction Testing Results

Sample Number	Sample Date	Lot Number	Easting	Northing	Dry Density Ratio	FMC	OMC	Moisture +/-	CBR
21791/S/167612	21/08/2024	Lot 501 - 503	714597.5	8621060	92	10.5	11	-0.5	
21791/S/167613	22/08/2024	On site Stockpile	Southern End					0	25
21791/S/167614	22/08/2024	On site Stockpile	Northern End					0	30
21791/S/167775	23/08/2024	Lot 504 - 511	771445.3	8621137	99	11.1	11	0.1	
21791/S/167776	23/08/2024	Lot 504 - 511	714487.1	8621120	100	11	11	0	
21791/S/167777	23/08/2024	Lot 504 - 511	714521.8	8621101	99	11.5	12.5	-1	
21791/S/167843	26/08/2024	Lot 504 - 511 - LY2	714444.1	8621135	99.5	9.5	10.5	-1	
21791/S/167844	26/08/2024	Lot 504 - 511 - LY2	714482.7	8621121	98	10.5	11	-0.5	
21791/S/167845	26/08/2024	Lot 504 - 511 - LY2	714518	8621103	99.5	10	10	0	
21791/S/167857	27/08/2024	On site Stockpile	Lot 509-511					0	10
21791/S/167956	28/08/2024	Lot 507 - 511 - LY3	714452.1	8621124	97.5	10.1	9.5	0.6	
21791/S/167957	28/08/2024	Lot 507 - 511 - LY3	714470	8621115	98	10.8	10	0.8	
21791/S/167958	28/08/2024	Lot 507 - 511 - LY3	714510	8621119	99	10.4	10	0.4	
21791/S/167959	28/08/2024	Lot 520 - 523 R.Side LY 1	714463.2	8621076	100	11.2	11	0.2	
21791/S/167960	28/08/2024	Lot 520 - 523 R.Side LY 1	714441.9	8621067	98.5	10.8	10.5	0.3	
21791/S/167961	28/08/2024	Lot 520 - 523 R.Side LY 1	714441.7	8621049	100	9.9	10	-0.1	
21791/S/167982	29/08/2024	Lot 520 - 523 L.Side LY 1	714426.1	8621070	98.5	10.1	9	1.1	
21791/S/167983	29/08/2024	Lot 520 - 523 L.Side LY 1	714407.4	8621071	99	11	9	2	
21791/S/167984	29/08/2024	Lot 520 - 523 L.Side LY 1	714433.9	8621072	98	10.6	9.5	1.1	
21791/S/168101	30/08/2024	Lot 519 - 523 LY 2	714474.3	8621079	98.5	10.5	9.5	1	
21791/S/168102	30/08/2024	Lot 519 - 523 LY 2	714448.6	8621067	98	12.3	10.5	1.8	11
21791/S/168103	30/08/2024	Lot 519 - 523 LY 2	714416.2	8621055	98	11.8	10.5	1.3	
21791/S/168169	09/02/2024	Lot 515 - 517 - LY1	714422.6	8621104	99.5	11.9	11	0.9	
21791/S/168170	09/02/2024	Lot 515 - 517 - LY1	714408.7	8621105	100	11.4	9	2.4	10
21791/S/168171	09/02/2024	Lot 515 - 517 - LY1	714394.1	8621083	99.5	10.6	11	-0.4	
21791/S/168299	09/03/2024	Lot 519 - 523- LY3	714469.8	8621072	101.5	13.1	12.5	0.6	
21791/S/168300	09/03/2024	Lot 519 - 523- LY3	714452.2	8621061	100.5	12.7	12	0.7	12
21791/S/168301	09/03/2024	Lot 519 - 523- LY3	714419.6	8621052	101.5	13.5	13	0.5	
21791/S/168302	09/03/2024	Lot 532 - 536- LY1	714491.1	8621016	101	11.9	11.5	0.4	
21791/S/168303	09/03/2024	Lot 532 - 536- LY1	714491.2	8621016	100	12.6	13.5	-0.9	10
21791/S/168304	09/03/2024	Lot 532 - 536- LY1	714504.9	8621013	101.5	12.7	13.5	-0.8	

Sample Number	Sample Date	Lot Number	Easting	Northing	Dry Density Ratio	FMC	OMC	Moisture +/-	CBR
21791/S/168345	09/05/2024	Lot 515 - 518 - LY2	714445.5	8621094	99.5	11.5	12	-0.5	
21791/S/168346	09/05/2024	Lot 515 - 518 - LY2	714429.7	8621083	103	10.5	13	-2.5	
21791/S/168347	09/05/2024	Lot 515 - 518 - LY2	714414.3	8621073	102	10.1	12.5	-2.4	
21791/S/168348	09/05/2024	Lot 524 - 528 - LY2	714512.1	8621034	100	10.5	11.5	-1	
21791/S/168349	09/05/2024	Lot 524 - 528 - LY2	714487.9	8621017	100	11.4	12	-0.6	
21791/S/168350	09/05/2024	Lot 524 - 528 - LY2	714470.7	8621001	99	11.4	11.5	-0.1	
21791/S/168421	09/06/2024	Lot 512 - 514 LY1	714411.3	8621130	94.5	9.7	10	-0.3	
21791/S/168422	09/06/2024	Lot 512 - 514 LY1	714395.3	8621117	96.5	10.5	9.5	1	20
21791/S/168423	09/06/2024	Lot 512 - 514 LY1	714411.6	8621108	99.5	9.4	10	-0.6	
21791/S/168646	09/10/2024	Lot 529 - 530 - LY1	714445.6	8620968	98.5	14.2	12.5	1.7	
21791/S/168647	09/10/2024	Lot 529 - 530 - LY1	714439.9	8620983	98.5	11.1	9.5	1.6	11
21791/S/168648	09/10/2024	Lot 529 - 530 - LY1	714430.2	8620996	100	12.1	13.5	-1.4	
21791/S/168675	09/11/2024	Lot 529 - 530 - LY2	714434.6	8620990	94.5	11.6	12.5	-0.9	
21791/S/168676	09/11/2024	Lot 529 - 530 - LY2	714443.4	8620980	97.5	10.4	12.5	-2.1	
21791/S/168677	09/11/2024	Lot 529 - 530 - LY2	714444	8620972	95.5	11.2	13	-1.8	
21791/S/168678	09/11/2024	Lot 517,520 - 515,523 - LY4	714450.2	8621066	97	10.5	10	0.5	
21791/S/168679	09/11/2024	Lot 517,520 - 515,523 - LY4	714448.7	8621085	97.5	12.3	10.5	1.8	
21791/S/168680	09/11/2024	Lot 517,520 - 515,523 - LY4	714432	8621088	95.5	9.9	10	-0.1	
21791/S/168760	09/12/2024	Lot 529 - 530 - LY3	714435.8	8620979	96	13.4	13	0.4	
21791/S/168761	09/12/2024	Lot 529 - 530 - LY3	714441.3	8620994	98.5	11.1	13	-1.9	
21791/S/168762	09/12/2024	Lot 529 - 530 - LY3	714449.2	8620992	99.5	11	13	-2	
21791/S/168784	13/09/2024	Lot 527 - 529 LY4	714449.5	8620996	101.5	12	14	-2	
21791/S/169195	24/09/2024	521-523 LS - LY1	714464.4	8621061	99.5	10.1	11	-0.9	
21791/S/169196	24/09/2024	515-518 LS - LY5	714427.5	8621105	98	11.2	12	-0.8	
21791/S/169348	26/09/2024	520 to 523 LY4	714452.4	8621080	98.5	15.9	14.5	1.4	
21791/S/169349	26/09/2024	520 to 523 LY4	714432.9	8621079	99.5	10.5	11.5	-1	
21791/S/169350	26/09/2024	520 to 523 LY4	714414.3	8621067	96.5	13.2	13	0.2	
21791/S/169379	27/09/2024	513 to 514 LY 2	714399.2	8621116	98	12.2	12.5	-0.3	
21791/S/169380	27/09/2024	511 to 512 LY 2	714422.4	8621157	101	12	12.5	-0.5	
21791/S/169560	10/01/2024	On site Stockpile		Nrth Side of the Pit				0	7
21791/S/170053	10/09/2024	Lot 515 to 517 - LY 6	844441	8621099	99.5	14.1	15	-0.9	
21791/S/170054	10/09/2024	Lot 515 to 517 - LY 6	714430.6	8621082	99.5	16.5	17.5	-1	
21791/S/170055	10/09/2024	Lot 515 to 517 - LY 6	714405.8	8621077	97	14.7	16	-1.3	
21791/S/170523	16/10/2024	Lot 515-516 LY-7	701444.9	8621086	95.5	15.2	11.5	3.7	
21791/S/170524	16/10/2024	Lot 515-516 LY-7	714434	8621079	95	13.7	12	1.7	
21791/S/170525	16/10/2024	Lot 515-517 LY-7	714429.1	8621088	94	13.5	12.5	1	
21791/S/170526	16/10/2024	Lot 515-517 LY-7	714444.9	8621098	96.5	12.3	11.5	0.8	
21791/S/170527	16/10/2024	Lot 513-514 LY-3	714394.8	8621119	95.5	14.9	13.5	1.4	

Sample Number	Sample Date	Lot Number	Easting	Northing	Dry Density Ratio	FMC	OMC	Moisture +/-	CBR
21791/S/170528	16/10/2024	Lot 513-514 LY-3	714410.9	8621134	94.5	16.4	12	4.4	
21791/S/170921	17/10/2024	Lot 507 - 511 - Edge	714460	8621110	96.5	12.3	11.5	0.8	
21791/S/170959	21/10/2024	Lot 513-514 LY4	714413.8	8621139	95	11.5	14	-2.5	
21791/S/170960	21/10/2024	Lot 513-514 LY4	714398.5	8621126	95	11	10.5	0.5	
21791/S/170961	21/10/2024	Lot 513-514 LY3	714386.8	8621129	95	10.4	10.5	-0.1	
21791/S/170962	21/10/2024	Lot 513-514 LY3	714400.1	8621143	95.5	11.4	11	0.4	
21791/S/170969	10/11/2024	Stage 11 Earthworks	714383.8	8621055	98	13.2	13	0.2	
21791/S/170970	10/11/2024	Lot 524 - 528 LY3	714446.7	8621026	96.5	15.7	12.5	3.2	
21791/S/170971	10/11/2024	Lot 524 - 528 LY3	714477.9	8621041	97	13.8	12	1.8	
21791/S/171324	25/10/2024	Lot 513 - 514 LY5	714417.9	8621138	97.5	10.9	10.5	0.4	
21791/S/171325	25/10/2024	Lot 513 - 514 LY5			99.5	13.4	13.5	-0.1	
Average					98.13	11.6	11.4	0.3	14.5

* – Coordinates provided as easting and northings, in some cases given as chainages or not recorded.

FMC – Field Moisture Content

OMC – Optimum Moisture Content (Modified)

Where locations recorded borderline results (i.e. 94.5-95%), the average conformance requirements in the specification were referred to. Where results did not meet the required compaction or moisture control, geotechnician onsite advised remediation accordingly. Coordinates were generally provided by the client, however when they were not provided, handheld GPS devices were used instead. Testing locations were well distributed throughout the site where fill was to be placed. The geotechnician onsite also recorded approximate coordinates from a mobile phone, with the layer description given in the test results. **Figure 8** below provides an approximate location plan for the undertaken tests (not all locations were recorded, with some locations recorded in chainages and unable to be plotted. It is the responsibility of the client to provide survey accurate locations if required).

Figure 8: Approximate Compaction Testing Locations



The field moisture content (FMC) was generally marginally dryer than the OMC, however some seasonal rain caused some FMCs to be greater than OMC. Generally, however, the field moisture content was close to the OMC, with material appropriately prepared. **Table 4** below summarises average test results per working area/lot to the nearest 0.1 decimal place. Some lots were filled in strips over multiple allotments, and in these cases the minimum tests per area per working lot was adhered to.

Table 4: Average Test Results (to 0.1) per Working Area

Lot Number	Avg. DDR	Avg. FMC	Avg. OMC	Avg. MC	Avg. CBR	Avg. CBR Swell	Avg. LS	Avg. PI	Avg. PP 0.075	Sample Count
Lot 501 - 503	92.0	10.5	11.0	-0.5						1
On site Stockpile				0.0	18.0	1.5	5.0	11.0	30.0	4
Lot 504 - 511	99.3	11.2	11.5	-0.3						3
Lot 504 - 511 - LY2	99.0	10.0	10.5	-0.5						3
Lot 507 - 511 - LY3	98.2	10.4	9.8	0.6						3
Lot 520 - 523 R.Side LY 1	99.5	10.6	10.5	0.1						3
Lot 520 - 523 L.Side LY 1	98.5	10.6	9.2	1.4						3
Lot 519 - 523 LY 2	98.2	11.5	10.2	1.4	11.0	2.0	5.0	12.0	34.0	3
Lot 515 - 517 - LY1	99.7	11.3	10.3	1.0	10.0	2.5	6.0	12.0	34.0	3
Lot 519 - 523- LY3	101.2	13.1	12.5	0.6	12.0	2.0	5.5	12.0	34.0	3
Lot 532 - 536- LY1	100.8	12.4	12.8	-0.4	10.0	0.5	4.5	10.0	31.0	3
Lot 515 - 518 - LY2	101.5	10.7	12.5	-1.8						3
Lot 524 - 528 - LY2	99.7	11.1	11.7	-0.6						3
Lot 512 - 514 LY1	96.8	9.9	9.8	0.0	20.0	1.5	7.5	14.0	34.0	3
Lot 529 - 530 - LY1	99.0	12.5	11.8	0.6	11.0	2.0	6.0	10.0	28.0	3
Lot 529 - 530 - LY2	95.8	11.1	12.7	-1.6						3
521-523 LS - LY1	99.5	10.1	11.0	-0.9						1
515-518 LS - LY5	98.0	11.2	12.0	-0.8						1
520 to 523 LY4	98.2	13.2	13.0	0.2						3
513 to 514 LY 2	98.0	12.2	12.5	-0.3						1
511 to 512 LY 2	101.0	12.0	12.5	-0.5						1
Lot 515 to 517 - LY 6	98.7	15.1	16.2	-1.1						3
Lot 515-516 LY-7	95.3	14.5	11.8	2.7						2
Lot 515-517 LY-7	95.3	12.9	12.0	0.9						2
Lot 513-514 LY-3	95.0	15.7	12.8	2.9						2
Lot 507 - 511 - Edge	96.5	12.3	11.5	0.8						1
Lot 513-514 LY4	95.0	11.3	12.3	-1.0						2
Lot 513-514 LY3	95.3	10.9	10.8	0.2						2

Lot Number	Avg. DDR	Avg. FMC	Avg. OMC	Avg. MC	Avg. CBR	Avg. CBR Swell	Avg. LS	Avg. PI	Avg. PP 0.075	Sample Count
Lot 513 - 514 LY5	98.5	12.2	12.0	0.2						2
Lot 517,520 - 515,523 - LY4	96.7	10.9	-	0.7						3
Lot 529 - 530 - LY3	98.0	11.8	13.0	-1.2						3
Lot 527 - 529 LY4	101.5	12.0	14.0	-2.0						1
Stage 11 Earthworks	98.0	13.2	13.0	0.2						1
Lot 524 - 528 LY3	96.8	14.8	12.3	2.5						2
Average	98.2	11.8	11.8	0.1	14.6	1.6	5.5	11.4	31.5	80

Notes:

DDR - Dry Density Ratio
LS - Linear Shrinkage

PI - Plasticity Index
PP 0.075 – Percent Passing 0.075mm sieve

Table 5 outlines the summarised results from the previously completed earthworks undertaken in 2015-2016, as provided in *21791-P-303 The Heights Stage 11 Level 1* (see attached). Densities not achieving 95% are assumed to have been addressed by CS/BMD at the time of construction, as indicated in said report.

Table 5: Historical Level 1 Density Testing Summary (Construction Sciences (CS))

Lot Number	Avg. Dry Density Ratio	Avg FMC	Avg OMC	Avg MC	Sample Count
Stage 11 Foundation	94.5	13.9	11.7	2.2	6
424	95.0	13.1	11.5	1.6	1
425	97.8	11.1	13.0	-2.0	2
450, 454 Level 2	101.3	13.4	16.0	-2.6	2
-	94.2	19.6	16.1	3.5	9
Lot 431	91.3	10.3	9.5	0.8	2
Various	96.4	8.6	9.5	-0.9	4
346D	99.0	13.0	12.5	0.5	1
432433	95.5	10.8	11.0	-0.2	2
434,436E	96.5	10.6	8.8	1.9	2
435	95.5	13.7	12.0	1.7	1
436	96.0	8.7	10.0	-1.3	1
346D, 436B	95.3	10.6	11.3	-0.7	2
430, 439	99.3	9.2	12.5	-3.4	2
426	97.0	15.7	12.5	3.2	1
428	96.0	12.2	12.0	0.2	1
448 - 456	95.8	18.6	14.5	4.1	2
440 - 437	99.3	18.6	17.0	1.6	2
Average	95.9	13.9	12.8	1.1	43

Notes:

DDR - Dry Density Ratio
LS - Linear Shrinkage

PI - Plasticity Index
PP 0.075 – Percent Passing 0.075mm sieve

4.0 GENERAL SUPERVISION

4.1 Site Inspection Notes

The site notes from the onsite earthworks documented the general earthworks for each day, with the main observations being that the material was rolled with multiple passes with a heavy padfoot roller after fill placement. The site inspection notes are included below in **Table 6** and in Appendix B.

Table 6: Site Inspection Notes

Date	Supervisor	Inspection Type	General Observations
20/08/2024	HR	Proof Roll	Lots 501-508, 519-536 proof rolled. Minor deflections observed that were directed to be remediated, otherwise passing. Existing surface had been stripped down to previously placed fill outlined in previous Cardno/CS report.
20/08/2024	LW	Earthworks	Water cart conditioning lots. Tippers placing fill, lots 501 onwards. - 2x samples taken from onsite stockpile for Northern/Southern end. - Grader levelling fill. Tippers stockpiling fill along lot. Pad foot roller compacting lots 501-503.
21/08/2024	LW	Earthworks	1 x Density Test Lot 501-502. Numbers looked low. - Slow productivity throughout the day. One tipper delivering import fill. - Grader prepping site.
22/08/2024	HR	Proof Roll	Lots 507-514 proof rolled. Minor deflections observed that were directed to be remediated, otherwise passing.
22/08/2024	LW	Strip	Proof roll performed by CMW lots 50+ onwards. - Excavator/Loader removing unsuitable material. - Ripper stockpiling fill along lots 50+ onwards. - Slow movements - no grader onsite.
23/08/2024	DA	Earthworks	Water cart conditioning Lots (front half of 504 to 511). - Grader levelling fill. - Padfoot Roller compacting the fill. - Stockpiling material along the fence to place Lift-1 on back half of the above Lots.
26/08/2024	DA	Earthworks	Water cart conditioning Lots (about 504 to 511) back half of the lots. - Grader levelling the above lots. - Laying the 1st lift on back half of the above lots. - Stockpiling front half of Lot 504 to 511. - Unsuitable material removed.
27/08/2024	HR	Proof Roll	Lots 515-518 proof rolled with water truck, passing.
27/08/2024	HR	Proof Roll	Back of lots 513-514 proof rolled, passing. Could not proof roll on previous visit.
27/08/2024	DA	Earthworks	Stockpiling on Lots 504-510. - Unsuitable material removed. - Mixing stockpile on Lot 520-523. - Water cart conditioning fill. - No other work related to Level 1 will be happening on the day other than stockpiling and mixing material. These work are happening on the following lots 520-523 and 504-511.
28/08/2024	DA	Earthworks	Working on Lot 520-523 A Side LY1. - Working on Lot 507-511 LY3. - Reworking on Lot 520-523 because had low Nuc readings. - Conditioning, Mixing, Compacting Lot 504-511. - Pad foot roller compacting more on Lot 520-523. - Side tippers stockpiling on Lots 504-511.
29/08/2024	DA	Earthworks	Water cart conditioning Lot 520-523 L. side LY1. - Grader mixing and placing fill on above lots. - Pad foot roller compacting above lots. - Stockpiling on Lot 520-523 R. side for second layer. - Stockpiling on Lot 518-519.
30/08/2024	DA	Earthworks	Pad foot roller compacting Lot 520-523. - Stockpiling on Lot 518-519. - Water cart conditioning fill on 518-519 and grader mixing fill. - Grader levelling. - Excavator placing fill in the trench. - Grader levelling fill in the trench and pad foot roller compacting each layer. - Taking density tests on each layer. - Water cart conditioning trench to keep the moisture.
2/09/2024	DA	Earthworks	Have stockpiled on lot 519-523 for layer 3. - Working on lot 532-536. - Working on lot 515-517 LY1. - Grader placing fill, padfoot compacting, water cart conditioning on lots 532-536 and 524-528. - Placing material on 519-523, grader mixing, water cart conditioning, grader placing fill, compacting fill by padfoot roller on above lots. - Working on all above-mentioned lots on the day.
3/09/2024	DA	Earthworks	Grader levelling fill, Pad Foot Roller compacting fill on lots 515-518. - Side tipper stockpiling on lot 523-520. - Unsuitable materials removed. - Water cart conditioning lots 536-531 and 524-528. - Pad Foot compacting lot 531-536 LY2.
5/09/2024	DA	Earthworks	Side tipper stockpiling on lots 518-515. - Grader blade mixing, water cart conditioning, pad foot compacting fill on above lots. - Same time work was underway on lots 524-528. - Mostly carting fill, conditioning, mixing and placing on above lots. - Unsuitable material removed.

Date	Supervisor	Inspection Type	General Observations
9/09/2024	DA	Earthworks	Carting fill to the lots. - Slow movements other than side tippers stockpiling on Lots 520-523, Lot 518-515, Lot 524-528.
10/09/2024	DA	Earthworks	Side tipper stockpiling topsoil on Lot 531-536. - Working on multiple lots: Lot 529-530, Lot 520-523 LY4, Lot 515-517. - Side tipper stockpiling, Grader blade mixing, Water cart conditioning fill, Grader placing fill, and Padfoot Roller compacting fill.
11/09/2024	DA	Earthworks	Side tipper stockpiling top soil on Lot 531-536. - Working on Lot 529-530, Grader blade mixing fill, Water cart conditioning fill, Padfoot Roller compacting fill. - Unsuitable material removed from topsoil stockpiles and on Lot 529-530. - Water cart conditioning fill of Lots 520-519.
12/09/2024	DA	Earthworks	Working on Lot 529-530 most of the work of the day on the above lots. - Water cart conditioning Lot, Grader blade mixing fill, Grader placing fill, and Padfoot Roller compacting fill. - Side tipper carting fill.
13/09/2024	DA	Earthworks	Slow movement. - Working on Lot 527-529. - Side tipper carting fill, Grader blade mixing, Water cart conditioning fill, Grader placing fill, and Padfoot Roller compacting fill. - From Lot 527 to 529 have a gradual incline, so need an extra lift to get to the desired height.
23/09/2024	DA	Earthworks	Lot 521-523 Edge where Healey Street side, needed just a single lift to get to the desired height. - These lift densities will be testing on tomorrow, 24th.
24/09/2024	DA	Earthworks	Did two density testing on the work performed on 29th. - Lot 521-523 LS LY1 is a small pad towards the trench side (Healey Street).
27/09/2024	DA	Earthworks	Slow movement. - Did two density testing on below lots.
8/10/2024	DA	Earthworks	Water cart conditioning. - Grader blade mixing fill. - Pad foot compacting fill. - Mainly working on Lot 515 to 517 - LY6.
8/10/2024	DA	Earthworks	Water cart conditioning. - Grader blade mixing fill. - Pad foot compacting fill. - Mainly working on Lot 515 to 517 - LY6.
9/10/2024	DA	Earthworks	Slow movement. - Took 3x Density on Lots 515 to 517. - Lot 517 finished yesterday, 8th October.
11/10/2024	DA	Earthworks	2x Density testing of Lots 524-528 LY3.
15/10/2024	DA	Earthworks	Water cart conditioning fill on Lot 515-517 and Lot 513-514 LY3. - Grader mixing fill on the above lots. - Padfoot Roller compacting the above lots. - Side tipper stockpiling fill on Lots 517-515.
16/10/2024	DA	Earthworks	Level 1 work is coming to an end soon, with only a few lifts needed, primarily around Lots 515-517 and Lots 511-514. - Progress on Level-1 work remains slow.
17/10/2024	DA	Earthworks	Level-1 work remains slow. - Visiting the site while Level-1 work is in progress. - They are focusing on small areas where only a few lifts are needed in the remaining sections. The fill had been completed by the time I arrived at the site.
21/10/2024	DA	Earthworks	The lifts had been completed over the weekend. - Visiting the site when Level-1 work is in progress.
25/10/2024	DA	Earthworks	Two density tests were done on Lot 513-514. - Working on Lots 520 to 523 to bring fill to the desired height on the above lots. - Grader mixing fill and placing. - Padfoot Roller compacting fill.

4.2 Site Inspection Photographs

Photographic records were taken for every site visit, inspection, proof roll and sampling point for internal records. **Figure 9 and 10** provides a plot of photos taken, and image of typical site works respectively, with daily records included in the Appendix B.

Figure 9: Level 1 Site Supervision Photo locations

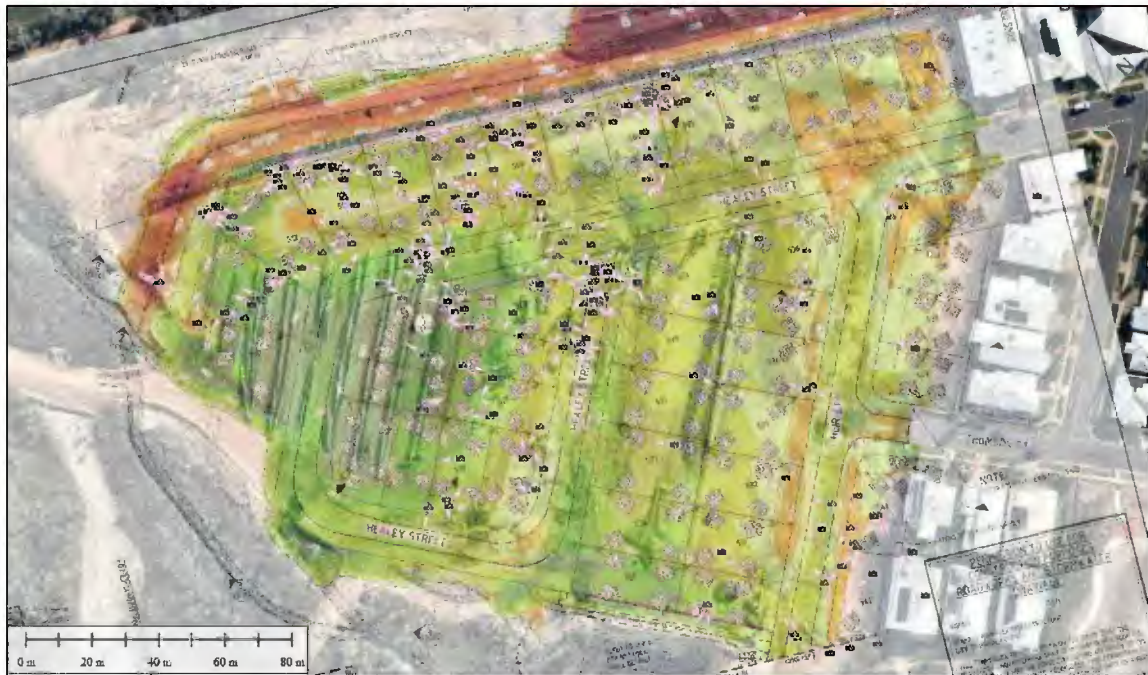


Figure 10: Level 1 site works – Typical Conditions



5.0 TRENCHES AND OTHER WORKS

Trench works were undertaken for the installation of stormwater and sewer lines and backfilled under the requirements of the provided specification under Level 2 testing conditions. CS technicians completed conformance testing at the base of trenches and on backfilled layers to surface.

A temporary sediment runoff basin was also existing on the site, will become a water feature for the development (see **Figure 11** below).

Figure 11: Runoff Basin



No demolition was undertaken prior to clearing and filling, other than connecting to existing stormwater/sewerage infrastructure and other minor works (i.e. removal of minor concrete slabs).

6.0 ADDITIONAL WORKS/REQUIREMENTS

No additional requirements were requested by the client. Level 2 testing for access roads was undertaken as directed, and they can be incorporated into this report at an additional cost if required. **Figure 12** below observes the most updated imagery of the site, near to completion, with roads already completed.

Figure 12: Final Site Imagery as of 30/09/2024



7.0 CLOSURE

It is considered that the placement of fill at the **Stage 11 Allotments** Level 1 site between the 22/08/2024 to 25/10/2024 under CMW supervision was carried out in a controlled manner and the fill was compacted to a dry density ratio not less than the specified requirement. It is assessed that the fill covered by this report and the attached test results are in accordance with the Level 1 requirements of *AS3798-2007: Earthworks for Residential and Commercial Developments*.

We also confirm that:

- a) Our representative was in site attendance whilst earthworks filling was in progress between the **22/08/2024** and the **25/10/2024**.
- b) Pre – fill ground preparation was carried out in accordance with the specifications and site instruction given; see the attached *21791-P-303 The Heights Stage 11 Level 1* Report provided by Construction Sciences.
- 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.

This report has been prepared for use by **BMD Urban** in relation to the **Stage 11 Allotments, The Heights, Durack** project in accordance with the scope, proposed uses and limitations described in the report. Should you have further questions relating to the use of your report please do not hesitate to contact us.

Where a party other than **BMD Urban** seeks to rely upon or otherwise use this report, the consent of CMW should be sought prior to any such use. CMW can then advise whether the report and its contents are suitable for the intended use by the other party.

USING YOUR CMW GEOTECHNICAL REPORT

Geotechnical reporting relies on interpretation of facts and collected information using experience, professional judgement, and opinion. As such it generally has a level of uncertainty attached to it, which is often far less exact than other engineering design disciplines. The notes below provide general advice on what can be reasonably expected from your report and the inherent limitations of a geotechnical report.

Preparation of your report

Your geotechnical report has been written for your use on your project. The contents of your report may not meet the needs of others who may have different objectives or requirements. The report has been prepared using generally accepted Geotechnical Engineering and Engineering Geology practices and procedures. The opinions and conclusions reached in your report are made in accordance with these accepted principles. Specific items of geotechnical or geological importance are highlighted in the report.

In producing your report, we have relied on the information which is referenced or summarised in the report. If further information becomes available or the nature of your project changes, then the findings in this report may no longer be appropriate. In such cases the report must be reviewed, and any necessary changes must be made by us.

Your geotechnical report is based on your project's requirements

Your geotechnical report has been developed based on your specific project requirements and only applies to the site in this report. Project requirements could include the type of works being undertaken; project locality, size and configuration; the location of any structures on or around the site; the presence of underground utilities; proposed design methodology; the duration or design life of the works; and construction method and/or sequencing.

The information or advice in your geotechnical report should not be applied to any other project given the intrinsic differences between different projects and site locations. Similarly geotechnical information, data and conclusions from other sites and projects may not be relevant or appropriate for your project.

Interpretation of geotechnical data

Site investigations identify subsurface conditions at discrete locations. Additional geotechnical information (e.g. literature and external data source review, laboratory testing etc) are interpreted by Geologists or Engineers to provide an opinion about a site specific ground models, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist due to the variability of geological environments. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions. Interpretation of factual data can be influenced by design and/or construction methods. Where these methods change review of the interpretation in the report may be required.

Subsurface conditions can change

Subsurface conditions are created by natural processes and then can be altered anthropically or over time. For example, groundwater levels can vary with time or activities adjacent to your site, fill may be placed on a site, or the consistency of near surface conditions might be susceptible to seasonal changes. The report is based on conditions which existed at the time of investigation. It is important to confirm whether conditions may have changed, particularly when large periods of time have elapsed since the investigations were performed.

Interpretation and use by other design professionals

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical report. To help avoid misinterpretations, it is important to retain the assistance of CMW to work with other project design professionals who are affected by the contents of your report. CMW staff can explain the report implications to design professionals and then review design plans and specifications to see that they have correctly incorporated the findings of this report.

Your report's recommendations require confirmation during construction

Your report is based on site conditions as revealed through selective point sampling. Engineering judgement is then applied to assess how indicative of actual conditions throughout an area the point sampling might be. Any assumptions made cannot be substantiated until construction is complete. For this reason, you should retain geotechnical services throughout the construction stage, to identify variances from previous assumption, conduct additional tests if required and recommend solutions to problems encountered on site. A Geotechnical Engineer, who is fully familiar with the site and the background information, can assess whether the report's recommendations remain valid and whether changes should be considered as the project develops. An unfamiliar party using this report increases the risk that the report will be misinterpreted.

Environmental matters are not covered

Unless specifically discussed in your report environmental matters are not covered by a CMW Geotechnical Report. Environmental matters might include the level of contaminants present of the site covered by this report, potential uses or treatment of contaminated materials or the disposal of contaminated materials. These matters can be complex and are often governed by specific legislation.

The personnel, equipment, and techniques used to perform an environmental study can differ significantly from those used in this report. For that reason, our report does not provide environmental recommendations. Unanticipated subsurface environmental

problems can have large consequences for your site. If you have not obtained your own environmental information about the project site, ask your CMW contact about how to find environmental risk-management guidance.

APPENDIX A

Site Maps & Drawings



Legend



- Not Included
- Proof Roll 20240820082501
- Proof Roll 20240822081622
- Proof Roll 20240827083829
- Proof Roll 20240827084442
- Dry Density Test Results

NOTE:
THE HEALY INTO EXISTING STAGE

PERMISSION TO USE FOR
CONSTRUCTION PURPOSES
ROADWORKS AND STORMWATER
MANAGEMENT

SIGNED
GENERAL
CITY OF

10 m 30 m 50 m

 DATA IS APPROXIMATE AND INTERPOLATED, INTENDED FOR ILLUSTRATION ONLY. BASEMAP COPYRIGHT REMAINS WITH Level 1 Supervision and Testing	 CMW Geosciences Great People Practical Solutions Map Produced by Construction Sciences Coordinate System: UTM Zone -52 / GDA2020 / meters	SCALE: 1:158	CLIENT: BMD Urban
		DATE: 08/01/2025	PROJECT: DAR2024-0061 The Heights Stage 11 Level 1
		DRAWN: HR	LOCATION: Durack, Palmerston NT
		DRAWING No: Drawing 1	Level 1 Supervision and Testing

EARTHWORKS VOLUMES:

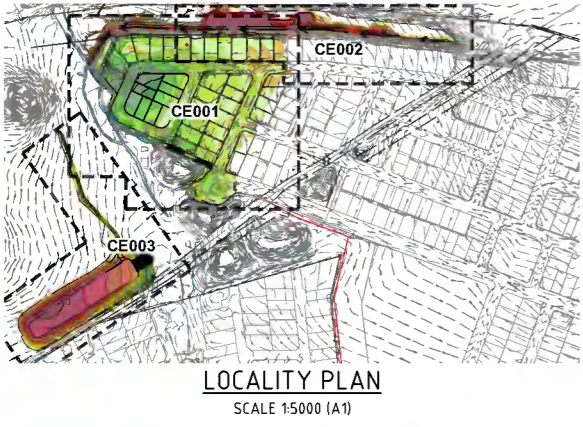
CUT: 17619m³
 FILL: 21773m³
 IMPORT: 4154m³

VOLUMES HAVE NOT BEEN ADJUSTED FOR BULKING OR COMPACTION, NOR DO THEY ALLOW FOR TRENCH SPOIL, UN-CONTROLLED FILL AREAS OR FILLING OF EXISTING DAMS.

EARTHWORKS DEPTH RANGE
 Fin EXISTING TO Fin DESIGN (0.25m INTERVALS)

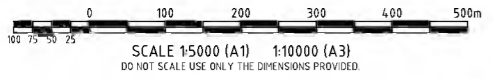
FILL 1.75m +	CUT 0.00m - 0.25m
FILL 1.50m - 1.75m	CUT 0.25m - 0.50m
FILL 1.25m - 1.50m	CUT 0.50m - 0.75m
FILL 1.00m - 1.25m	CUT 0.75m - 1.00m
FILL 0.75m - 1.00m	CUT 1.00m - 1.25m
FILL 0.50m - 0.75m	CUT 1.25m - 1.50m
FILL 0.25m - 0.50m	CUT 1.50m - 1.75m
FILL 0.00m - 0.25m	CUT 1.75m +

- LEGEND**
- 26.0 --- ULTIMATE SURFACE CONTOURS
 - TOP OF BATTER
 - TOE OF BATTER / CHANGE IN GRADE
 - MOUNTABLE KERB
 - KERB AND GUTTER REFER TO CS-3300 (TYP)
 - LAYBACK KERB AND CHANNEL IN ACCORDANCE WITH CS3300
 - SPECIAL LAYBACK KERB
 - SWALE
 - + = AMOUNT OF FILL
 - = AMOUNT OF CUT
 - FSL = FINISHED SURFACE LEVEL
 - RETAINING WALL
 - EXISTING ACOUSTIC FENCE



WARNING
BEWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



PERMISSION TO USE FOR CONSTRUCTION PURPOSES ROADWORKS AND STORMWATER DRAINAGE

SIGNED _____ DATE _____

GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS ASSOCIATED. THIS PERMISSION IS VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF SIGNED APPROVAL.

User: MICHAELA CASTELLORIE Name: S:\1202\data\main\2024\08\08\01_2024\env-dwg\1:2 current\DWG\B00611-CE003.dwg Date: 8/8/2024 8:25:31 AM

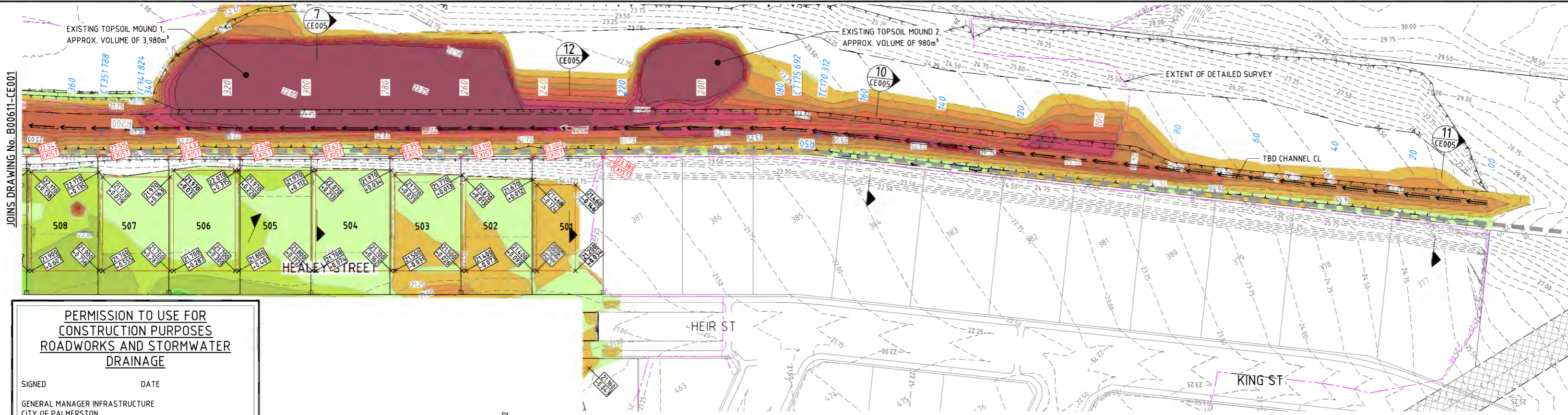
0	ISSUED FOR CONSTRUCTION	MMC	ES	WPR	WPR	08/08/24
No.	Amendments	Drawn	Design	Design Chk	Appd	Date

ENGINEERING CERTIFICATION
 Registered Engineer 5294036
 8/8/2024
 Date Register
 THE HEIGTHS
 DURACK

THE HEIGTHS
DURACK

Empower
ENGINEERS & PROJECT MANAGERS
ABN 23 010 743 692

Client	URBEX PTY LTD	Datum	AHD
Project	THE HEIGTHS - STAGE 11	PSM	RL
Title	EARTHWORKS MANAGEMENT LAYOUT PLAN SHEET 1 OF 3	(MGA) COORD	
		FOR CONSTRUCTION	
		Project No	Drawing No
		B00611-CE001	0



EARTHWORKS DEPTH RANGE

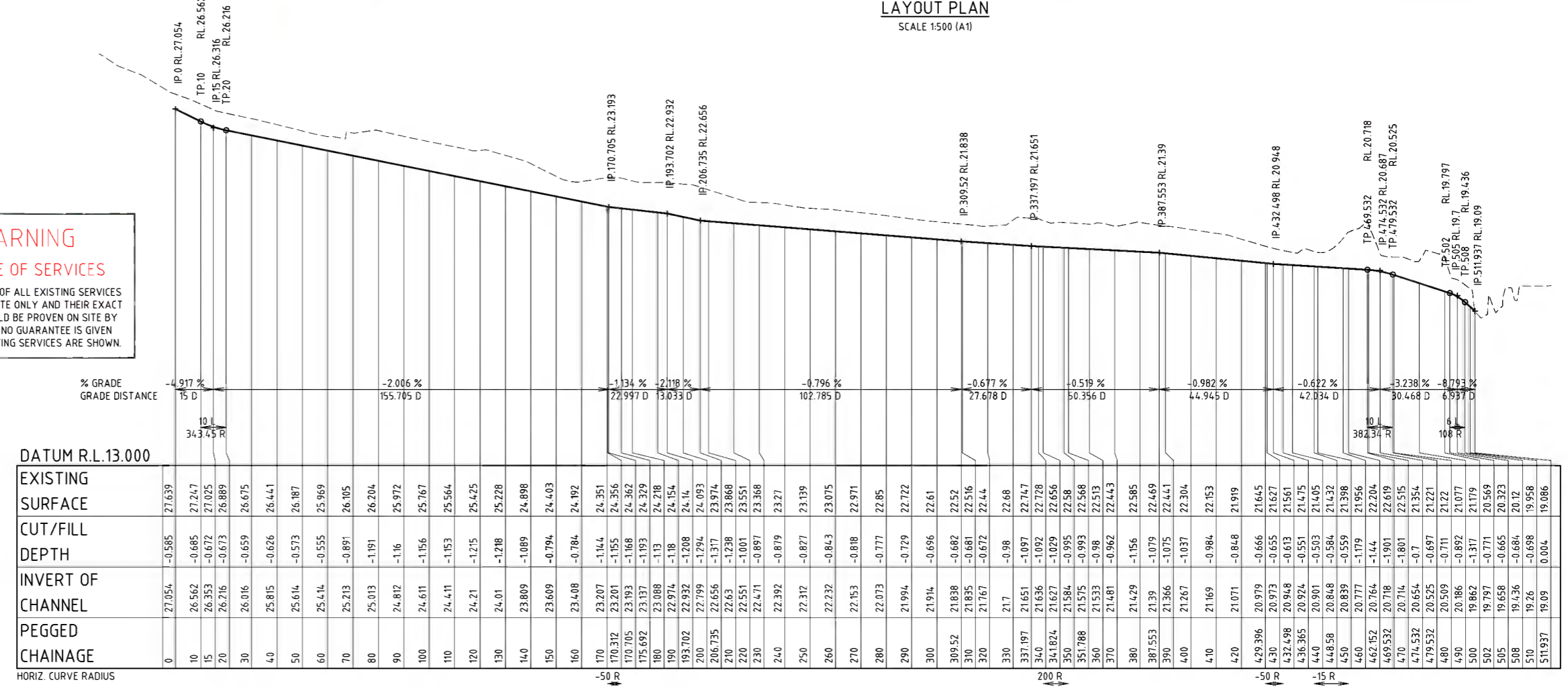
FIN EXISTING TO FIN DESIGN (0.25m INTERVALS)

 FILL 1.75m +	 CUT 0.00m - 0.25m
 FILL 1.50m - 1.75m	 CUT 0.25m - 0.50m
 FILL 1.25m - 1.50m	 CUT 0.50m - 0.75m
 FILL 1.00m - 1.25m	 CUT 0.75m - 1.00m
 FILL 0.75m - 1.00m	 CUT 1.00m - 1.25m
 FILL 0.50m - 0.75m	 CUT 1.25m - 1.50m
 FILL 0.25m - 0.50m	 CUT 1.50m - 1.75m
 FILL 0.00m - 0.25m	 CUT 1.75m +

- #### LEGEND
- 26.0 - ULTIMATE SURFACE CONTOURS
 - TOP OF BATTER
 - TOE OF BATTER / CHANGE IN GRADE
 - ROAD CONTROL LINE
 - MOUNTABLE KERB
 - KERB AND GUTTER REFER TO CS-3300 (TYP)
 - LAYBACK KERB AND CHANNEL IN ACCORDANCE WITH CS3300
 - SPECIAL LAYBACK KERB
 - SWALE
 - FSL = AMOUNT OF FILL
 - V = AMOUNT OF CUT
 - FSL = FINISHED SURFACE LEVEL
 - WATER MAIN EASEMENT
 - ELECTRICAL MAIN EASEMENT
 - EXISTING ACOUSTIC FENCE

WARNING
BWARE OF SERVICES

THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



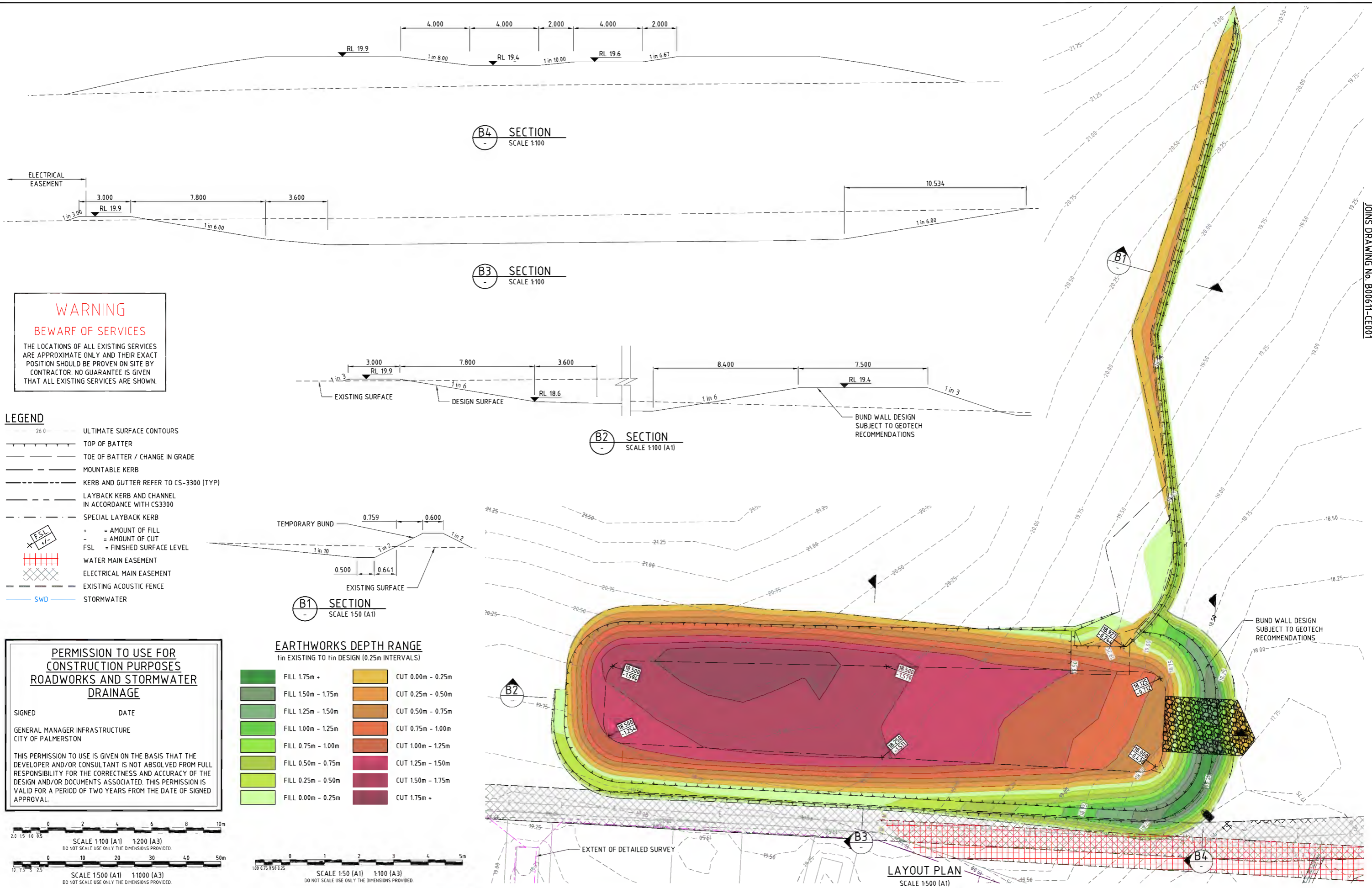
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No.	Amendments	Drawn	Design	Design	Chk	Appd
Registered Engineer 8/8/2024 Date Register ENGINEERING CERTIFICATION 5294036						

THE HEIGHTS
DURACK

Empower
ENGINEERS & PROJECT MANAGERS
ABN 23 010 743 692

Client: **URBEX PTY LTD**
Project: **THE HEIGHTS - STAGE 11**
Title: **EARTHWORKS MANAGEMENT LAYOUT PLAN SHEET 2 OF 3**

Datum: **AHD PSM RL (MGA) COORD FOR CONSTRUCTION**
Project No: **B00611-CE002**
Drawing No: **0**
Rev: **0**

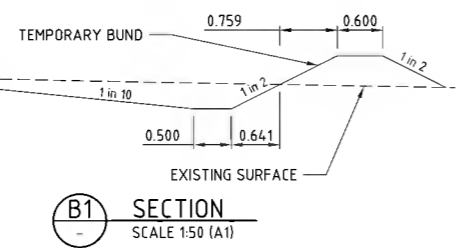


JOINS DRAWING No. B00611-CE001

WARNING
BEWARE OF SERVICES

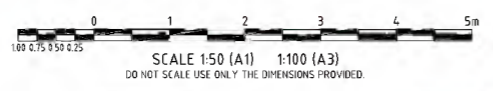
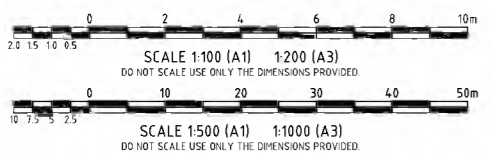
THE LOCATIONS OF ALL EXISTING SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CONTRACTOR. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

- LEGEND**
- 26.0 --- ULTIMATE SURFACE CONTOURS
 - TOP OF BATTER
 - TOE OF BATTER / CHANGE IN GRADE
 - MOUNTABLE KERB
 - KERB AND GUTTER REFER TO CS-3300 (TYP)
 - LAYBACK KERB AND CHANNEL IN ACCORDANCE WITH CS3300
 - SPECIAL LAYBACK KERB
 - + = AMOUNT OF FILL
 - = AMOUNT OF CUT
 - FSL = FINISHED SURFACE LEVEL
 - ||||| WATER MAIN EASEMENT
 - ||||| ELECTRICAL MAIN EASEMENT
 - EXISTING ACOUSTIC FENCE
 - SWD --- STORMWATER



EARTHWORKS DEPTH RANGE
Fin EXISTING TO Fin DESIGN (0.25m INTERVALS)

FILL 1.75m +	CUT 0.00m - 0.25m
FILL 1.50m - 1.75m	CUT 0.25m - 0.50m
FILL 1.25m - 1.50m	CUT 0.50m - 0.75m
FILL 1.00m - 1.25m	CUT 0.75m - 1.00m
FILL 0.75m - 1.00m	CUT 1.00m - 1.25m
FILL 0.50m - 0.75m	CUT 1.25m - 1.50m
FILL 0.25m - 0.50m	CUT 1.50m - 1.75m
FILL 0.00m - 0.25m	CUT 1.75m +



PERMISSION TO USE FOR CONSTRUCTION PURPOSES ROADWORKS AND STORMWATER DRAINAGE

SIGNED _____ DATE _____

GENERAL MANAGER INFRASTRUCTURE
CITY OF PALMERSTON

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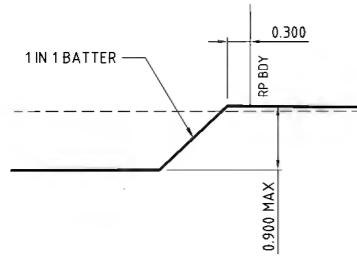
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No.	Amendments	Drawn	Design	Design Chk	Appd	Date

Registered Engineer
8/8/2024
Date Register
5294036
ENGINEERING CERTIFICATION
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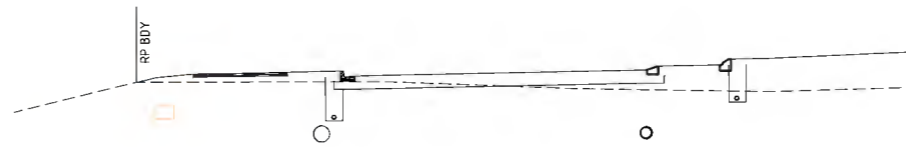
THE HEIGHTS
DURACK

Empower
ENGINEERS & PROJECT MANAGERS
ABN 23 010 743 692

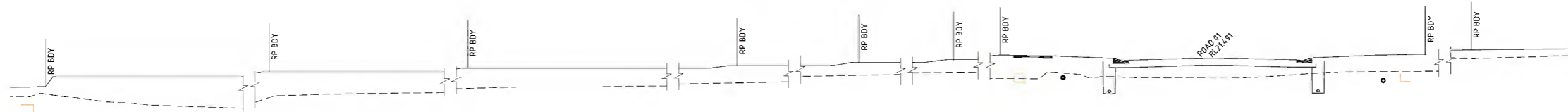
Client	URBEX PTY LTD	Datum	AHD
Project	THE HEIGHTS - STAGE 11	PSM	RL
Title	EARTHWORKS MANAGEMENT LAYOUT PLAN SHEET 3 OF 3	(MGA) COORD	FOR CONSTRUCTION
Project No.	B00611-CE003	Drawing No.	0



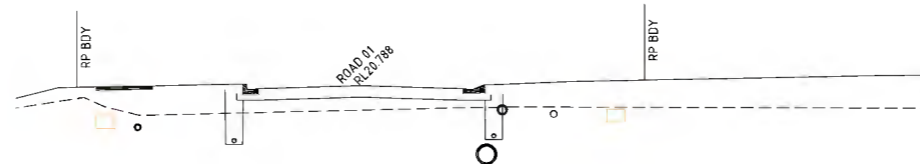
A TYPICAL INTER-ALLOTMENT BATTER DETAIL
 CE001 SCALE 1:50 (A1)



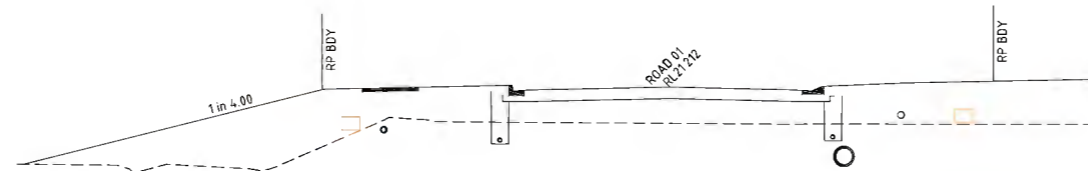
6 SECTION
 CE001 SCALE 1:100 (A1)



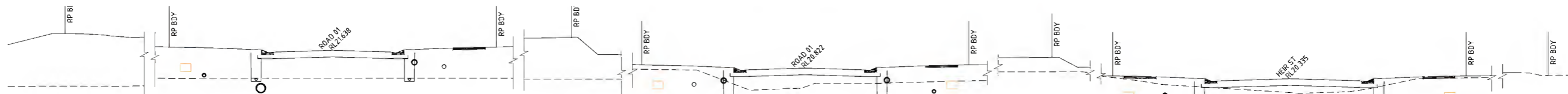
5 SECTION
 CE001 SCALE 1:100 (A1)



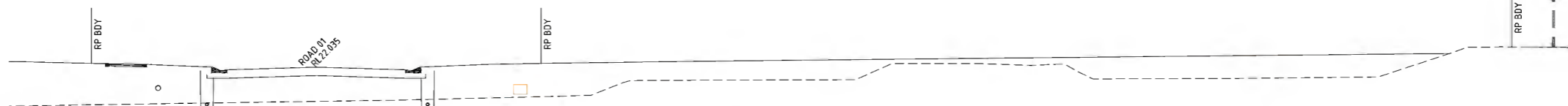
4 SECTION
 CE001 SCALE 1:100 (A1)



3 SECTION
 CE001 SCALE 1:100 (A1)



2 SECTION
 CE001 SCALE 1:100 (A1)



1 SECTION
 CE001 SCALE 1:100 (A1)

PERMISSION TO USE FOR CONSTRUCTION PURPOSES ROADWORKS AND STORMWATER DRAINAGE

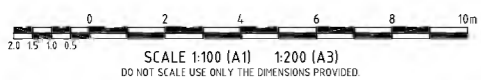
SIGNED _____ DATE _____

GENERAL MANAGER INFRASTRUCTURE
 CITY OF PALMERSTON

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WARNING
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User: MICHAELA CASTLEOFFICE Name: S:\123\123\data\main\2024\01\060601_2024\12\2024\current\DWG\060601-1-12024.dwg Date: 8/8/2024 8:25:52 AM

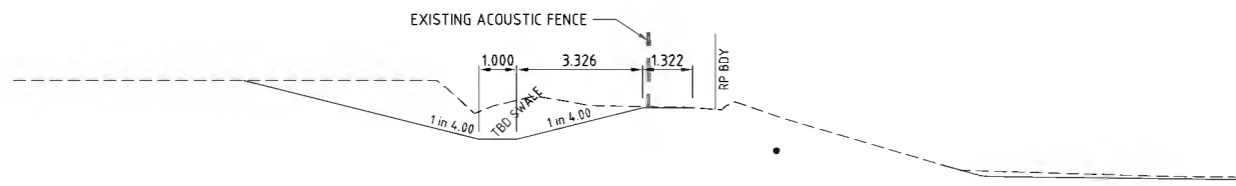
0	ISSUED FOR CONSTRUCTION	MMC	ES	WPR	WPR	08/08/24
No.	Amendments	Drawn	Design	Design Chk	Appd	Date

ENGINEERING CERTIFICATION
 Registered Engineer 5294036
 8/8/2024
 Date Register
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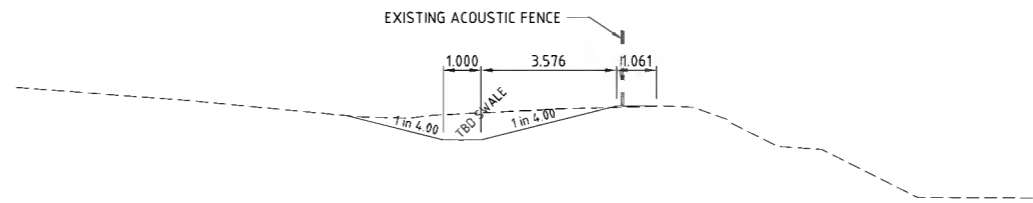
THE HEIGHTS
 DURACK

Empower
 ENGINEERS & PROJECT MANAGERS
 ABN 23 010 743 692

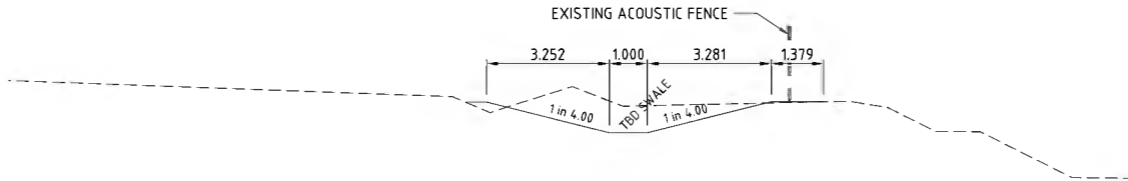
Client	URBEX PTY LTD	Datum	AHD
Project	THE HEIGHTS - STAGE 11	PSM	RL
Title	EARTHWORKS MANAGEMENT SECTIONS AND DETAILS SHEET 1 OF 2	(MGA) COORD	FOR CONSTRUCTION
Project No.	B00611-CE004	Drawing No.	0
Rev			



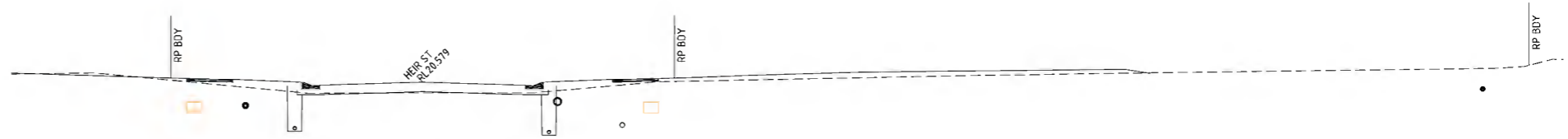
12 SECTION
CE002 SCALE 1:100 (A1)



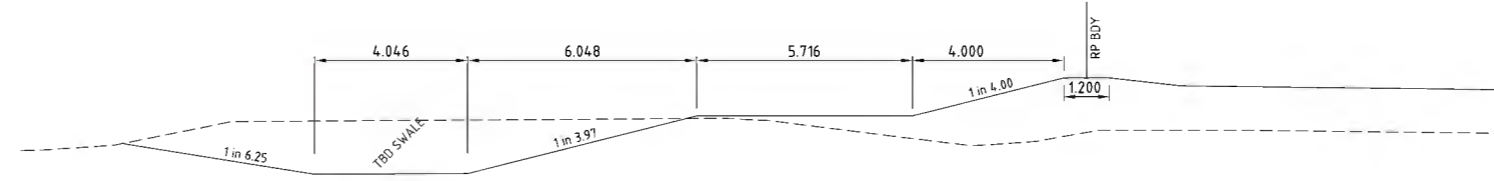
11 SECTION
CE002 SCALE 1:100 (A1)



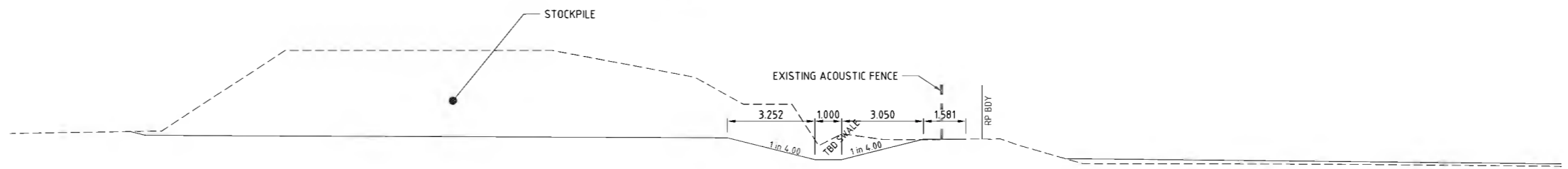
10 SECTION
CE002 SCALE 1:100 (A1)



9 SECTION
CE001 SCALE 1:100 (A1)



8 SECTION
CE001 SCALE 1:100 (A1)



7 SECTION
CE001 SCALE 1:100 (A1)

PERMISSION TO USE FOR CONSTRUCTION PURPOSES ROADWORKS AND STORMWATER DRAINAGE

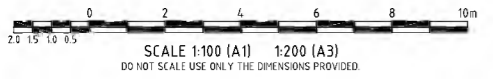
SIGNED _____ DATE _____

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CITY OF PALMERSTON

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User: MICHAELA CASTLEOFFICE Name: S:\Data\Projects\2024\08\08\01\000001_000001.dwg Date: 8/8/2024 8:25:53 AM

0	ISSUED FOR CONSTRUCTION	MMC	ES	WPR	WPR	08/08/24
No.	Amendments	Drawn	Design	Design Chk	Appd	Date

ENGINEERING CERTIFICATION
Registered Engineer 8/8/2024 5294036
Date Register

THE HEIGHTS
DURACK



Client	URBEX PTY LTD	Datum	AHD
Project	THE HEIGHTS - STAGE 11	PSM	RL
Title	EARTHWORKS MANAGEMENT SECTIONS AND DETAILS SHEET 2 OF 2	(MGA) COORD	
Project No.	B00611-CE005	Drawing No.	
Rev	0		

APPENDIX B

Site Inspection Notes & Photos



Photo 1 - Durack heights stage 11



Photo 2 - Durack heights stage 12

Project			BMD Urban
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	19/08/2024 12:5	



Photo 3 - Durack heights stage 13



Photo 4 - Durack heights stage 14

Project			BMD Urban
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	19/08/2024 12:5	



Photo 5 - Durack heights stage 15



Photo 6 - Durack heights stage 16

Project			BMD Urban
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	19/08/2024 12:5	



Photo 7 - Durack heights stage 17



Photo 8 - Durack heights stage 18

Project		
Ref	The Heights Stage 11 Level 1	BMD Urban
By	HR	
Revision	A 19/08/2024 12:5	



Photo 9 - Durack heights stage 19



Photo 10 - The heights stage 11 proof roll_DAR2024-0061

Project			BMD Urban
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	19/08/2024 12:5	

21 Heir St Durack NT

☉ 237°SW (T) ☉ 52 S 714622 8621063 ±10m ▲ 78m



Tipper stockpiling fill
Lot 501 - 503

The Heights - Stage 11
20 Aug 2024, 09:41:06

Photo 1 - The Heights - Stage 11_2024-08-20_09-41-06

9 Kruss St Durack NT

☉ 29°NE (T) ☉ 52 S 714609 8620992 ±30m ▲ -26m



Water cart conditioning fill, Grader levelling
Lot 501 - 503

The Heights - Stage 11
20 Aug 2024, 11:14:40

Photo 2 - The Heights - Stage 11_2024-08-20_11-14-40

Project	The Heights		Stage 11_2024
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	20/08/2024 12:1	
			BMD Urban

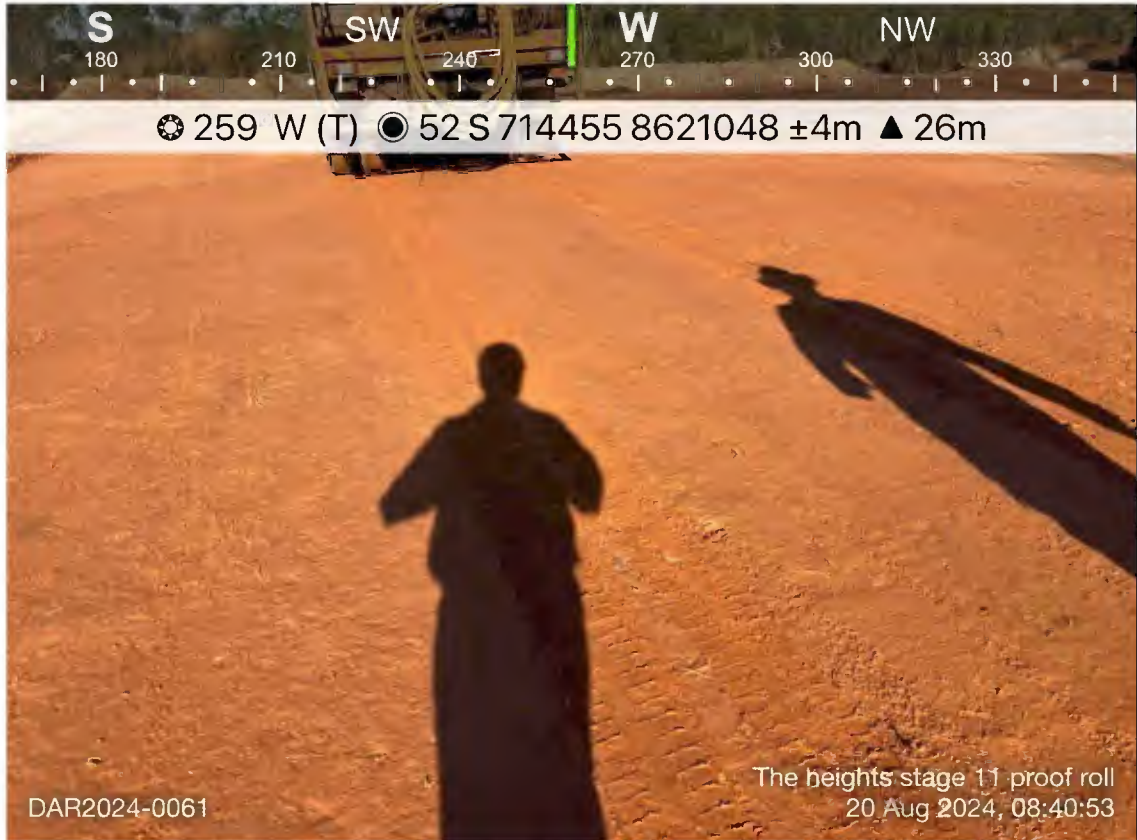


Photo 11 - The heights stage 11 proof roll DAR2024-0061 1



Photo 12 - The heights stage 11 proof roll_DAR2024-0061 2

Project	The heights stage 11 proof roll_DAR2024		BMD Urban
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	19/08/2024 11:1	

7 Kruss St Durack NT

☉ 348°N (T) ● 52 S 714585 8621020 ±5m ▲ 42m



Grader levelling fill
Lot 501 - 503

The Heights - Stage 11
20 Aug 2024, 13:17:26

Photo 3 - The Heights - Stage 11_2024-08-20_13-17-26

7 Kruss St Durack NT

☉ 330°NW (T) ● 52 S 714579 8621018 ±5m ▲ 21m



Water cart conditioning fill
Lot 501 - 503

The Heights - Stage 11
20 Aug 2024, 13:19:01

Photo 4 - The Heights - Stage 11_2024-08-20_13-19-01

Project	The Heights		Stage 11_2024
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	20/08/2024 3:47	
			BMD Urban

7 Kruss St Durack NT

☉ 14°N (T) ☉ 52 S 714574 8621018 ±5m ▲ 22m



Pad foot roller compacting fill
Lot 501 - 503

The Heights - Stage 11
20 Aug 2024, 14:20:03

Photo 5 - The Heights - Stage 11_2024-08-20_14-20-03

21 Heir St Durack NT

☉ 189°S (T) ☉ 52 S 714614 8621042 ±5m ▲ 36m



Lot 501 - 503

The Heights - Stage 11
21 Aug 2024, 09:13:10

Photo 6 - The Heights - Stage 11_2024-08-21_09-13-10

Project	The Heights		Stage 11_2024
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	20/08/2024 4:50	
			BMD Urban

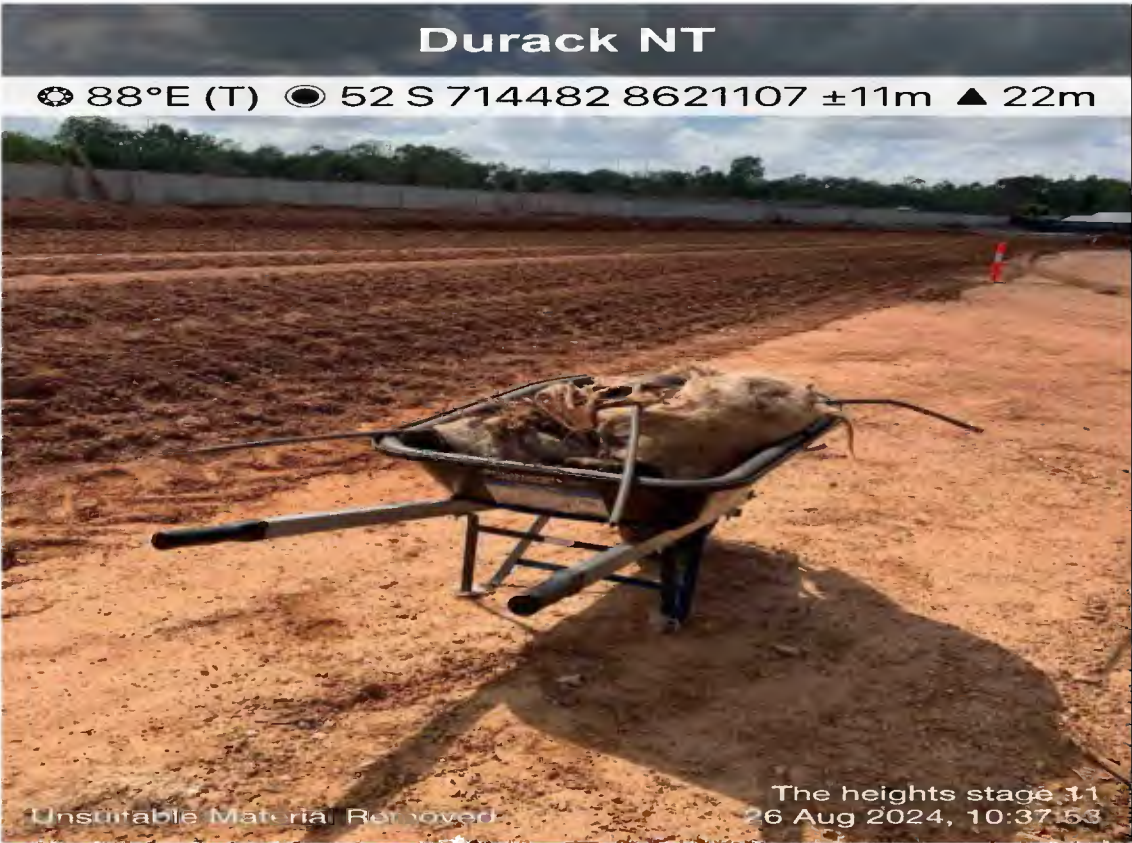


Photo 13 - The heights stage 11 proof roll_DAR2024-0061 3



Photo 14 - The heights stage 11 proof roll_DAR2024-0061 4

Project	The heights stage 11 proof roll_DAR2024	
Ref	The Heights Stage 11 Level 1	BMD Urban
By	HR	
Revision	A 21/08/2024 10:4	



- The heights stage 11_2024-08-26_Unsuitable Material Removed_1



The heights stage 11_2024-08-26_Density Testing on Lift 2, Lot 504 to 511

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 26/08/2024 1:07		



Photo 15 - The heights stage 11 proof roll_DAR2024-0061 5



Photo 16 - The heights stage 11 proof roll_DAR2024-0061 6

Project	The heights stage 11 proof roll_DAR2024	
Ref	The Heights Stage 11 Level 1	
By	HR	
Revision	A	21/08/2024 10:4

BMD Urban

Durack NT

☉ 99°E (T) ☉ 52 S 714426 8621135 ±6m ▲ 21m



Completed Lift 1 Front end Lot 504 -511

The heights stage 11
23 Aug 2024, 10:08:04

the heights stage 11_2024-08-23_Completed Lift 1 Front end Lot 504 -511

☉ 140°SE (T) ☉ 52 S 714431 8621165 ±7m ▲ 22m



Stockpiling Back end of Lot 504 -511

The heights stage 11
23 Aug 2024, 13:20:51

the heights stage 11_2024-08-23_Stockpiling Back end of Lot 504 -511

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	23/08/2024 12:3	

Durack NT

☉ 43°NE (T) ● 52 S 714468 8621109 ±8m ▲ 22m



Levelling front end of Lots of 1st Lift

The heights stage 11
23 Aug 2024, 09:34:47

he heights stage 11_2024-08-23_Levelling front end of Lots of 1st Lift

Durack NT

☉ 54°NE (T) ● 52 S 714464 8621105 ±18m ▲ 21m



Water Cart Conditioning

The heights stage 11
23 Aug 2024, 09:52:37

2 - The heights stage 11_2024-08-23_Water Cart Conditioning_09-

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 23/08/2024 12:0		

Durack NT

☉ 124°SE (T) ● 52 S 714466 8621111 ±9m ▲ 22m



Water Cart Conditioning

The heights stage 11
26 Aug 2024, 12:28:50

7 - The heights stage 11_2024-08-26_Water Cart Conditioning_12-

Durack NT

☉ 131°SE (T) ● 52 S 714462 8621116 ±5m ▲ 22m



Pad Foot Compacting & Water Cart
Conditioning

The heights stage 11
26 Aug 2024, 12:29:23

hts stage 11_2024-08-26_Pad Foot Compacting & Water Cart Conc

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 26/08/2024 2:58		

Durack NT

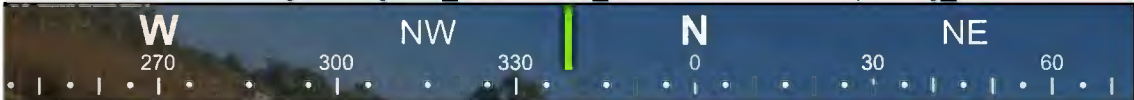
☉ 21°N (T) ☉ 52 S 714462 8621105 ±10m ▲ 22m



Pad Foot Roller Compacting

The heights stage 11
26 Aug 2024 12:58:12

1 - The heights stage 11_2024-08-26_Pad Foot Roller Compacting_1



☉ 339°N (T) ☉ 52 S 714422 8621135 ±3m ▲ 27m



DAR2024-0061

The heights stage 11 proof roll
27 Aug 2024, 08:38:15

Photo 10 - The heights stage 11 proof roll_DAR2024-0061 7

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 26/08/2024 3:28		



Photo 18 -

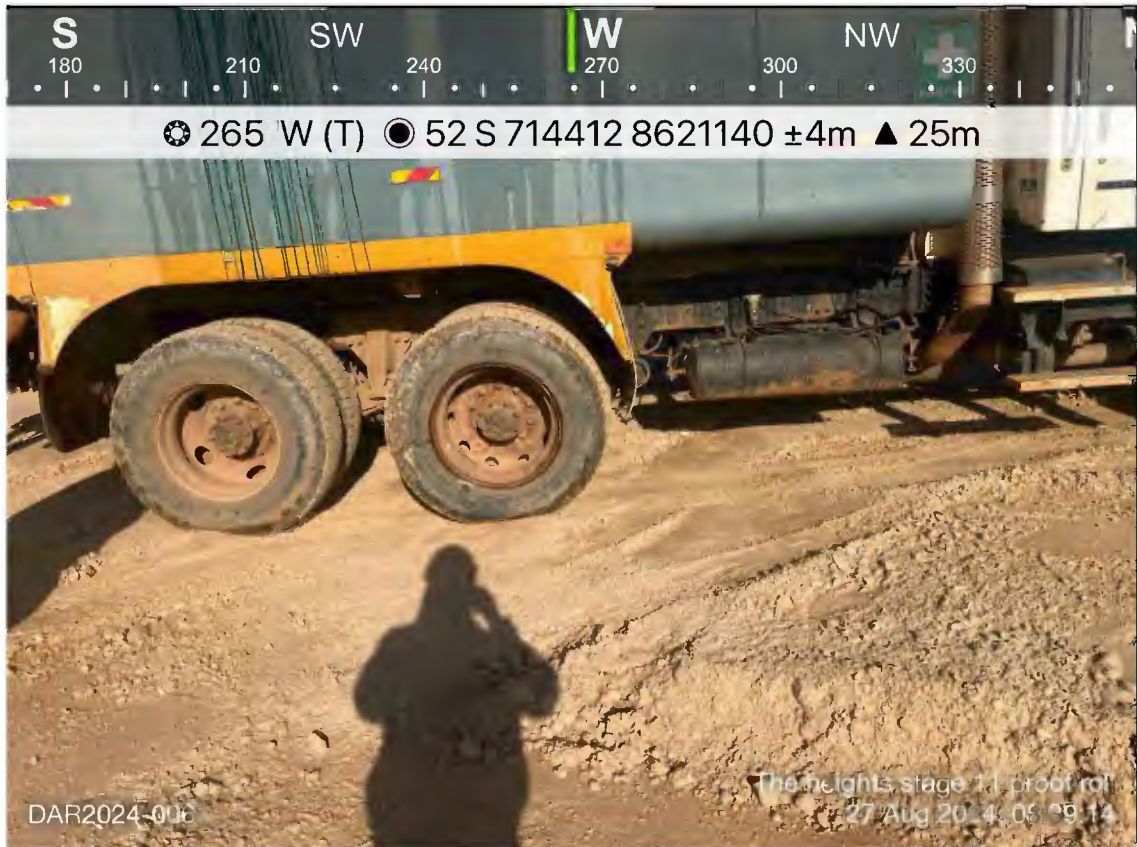


Photo 19 -

Project	The heights stage 11 proof roll_DAR2024	
Ref	The Heights Stage 11 Level 1	BMD Urban
By	HR	
Revision	A 26/08/2024 11:0	



Photo 20 -



Photo 21 -

Project	The heights stage 11 proof roll_DAR2024	
Ref	The Heights Stage 11 Level 1	BMD Urban
By	HR	
Revision	A 26/08/2024 11:1	



Photo 22 -



Photo 23 -

Project	The heights stage 11 proof roll_DAR2024	
Ref	The Heights Stage 11 Level 1	BMD Urban
By	HR	
Revision	A 26/08/2024 11:1	



Photo 24 -



Photo 25 -

Project	The heights stage 11 stockpile_DAR2024	
Ref	The Heights Stage 11 Level 1	BMD Urban
By	HR	
Revision	A 26/08/2024 11:2	



he heights stage 11_2024-08-28_Lot 520 - 523 after completing 1st L



- The heights stage 11_2024-08-28_Density Testing on Lot 520-523_

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 28/08/2024 1:54		



Photo 26 -



Photo 27 -

Project	The heights stage 11 stockpile_DAR2024		BMD Urban
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	26/08/2024 11:2	

Durack NT

📍 232°SW (T) 📍 52 S 714499 8621092 ±4m ▲ 22m



Lift 1 client re-working the Lot 520-523

The heights stage 11
28 Aug 2024, 09:45:42

the heights stage 11_2024-08-28_Lift 1 client re-working the Lot 520-5

Durack NT

📍 256°W (T) 📍 52 S 714477 8621060 ±6m ▲ 22m



Lot 520 - 523 after completing 1st Lift

The heights stage 11
28 Aug 2024, 11:23:07

the heights stage 11_2024-08-28_Lot 520 - 523 after completing 1st L

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	28/08/2024 12:1	
			BMD Urban

Durack NT

📍 278°W (T) 📍 52 S 714462 8621090 ±7m ▲ 21m



Grader Levelling Lot 517 - 515

The heights stage 11
29 Aug 2024, 09:46:22

- The heights stage 11_2024-08-29_Grader Levelling Lot 517 - 515_

Durack NT

📍 237°SW (T) 📍 52 S 714461 8621091 ±4m ▲ 21m



Grader Levelling Lot 517 - 515

The heights stage 11
29 Aug 2024, 09:46:31

- The heights stage 11_2024-08-29_Grader Levelling Lot 517 - 515_

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	29/08/2024 12:1	
BMD Urban			

Durack NT

☉ 103°E (T) ● 52 S 714434 8621076 ±6m ▲ 21m



Photo 15 - The heights stage 11_2024-08-29_Grader Levelling_09-1 -

Durack NT

☉ 274°W (T) ● 52 S 714464 8621090 ±8m ▲ 21m



Photo 16 - The heights stage 11_2024-08-29_Grader Levelling_09-46-

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	28/08/2024 11:4	
		BMD Urban	



- The heights stage 11_2024-08-29_Grader Levelling Lot 504 - 511_



- The heights stage 11_2024-08-29_Grader Levelling Lot 504 - 511_

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 29/08/2024 12:1		



- The heights stage 11_2024-08-30_Grader Levelling Lot 518-515_



- The heights stage 11_2024-08-30_Grader Levelling Lot 518-515._

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 29/08/2024 10:5		



- The heights stage 11_2024-08-30_Excavator Back Filling Trench_



e heights stage 11_2024-08-30_Back Filling Trench Grader Levelling

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	30/08/2024 12:0	
		BMD Urban	



Photo 2 -



Photo 3 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Feb-24		



the heights stage 11_2024-08-30_Back Filling Trench Grader Levelling



the heights stage 11_2024-08-30_Trench Density Testing on each lay

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 30/08/2024 12:0		



The heights stage 11_2024-08-30_Water Cart Conditioning Trench.



Photo 28 -

Project	The heights stage 11_2024		08-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 30/08/2024 4:41		



Photo 10 -



Photo 11 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		



Photo 8 -



Photo 9 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Feb-24		



Photo 4 -

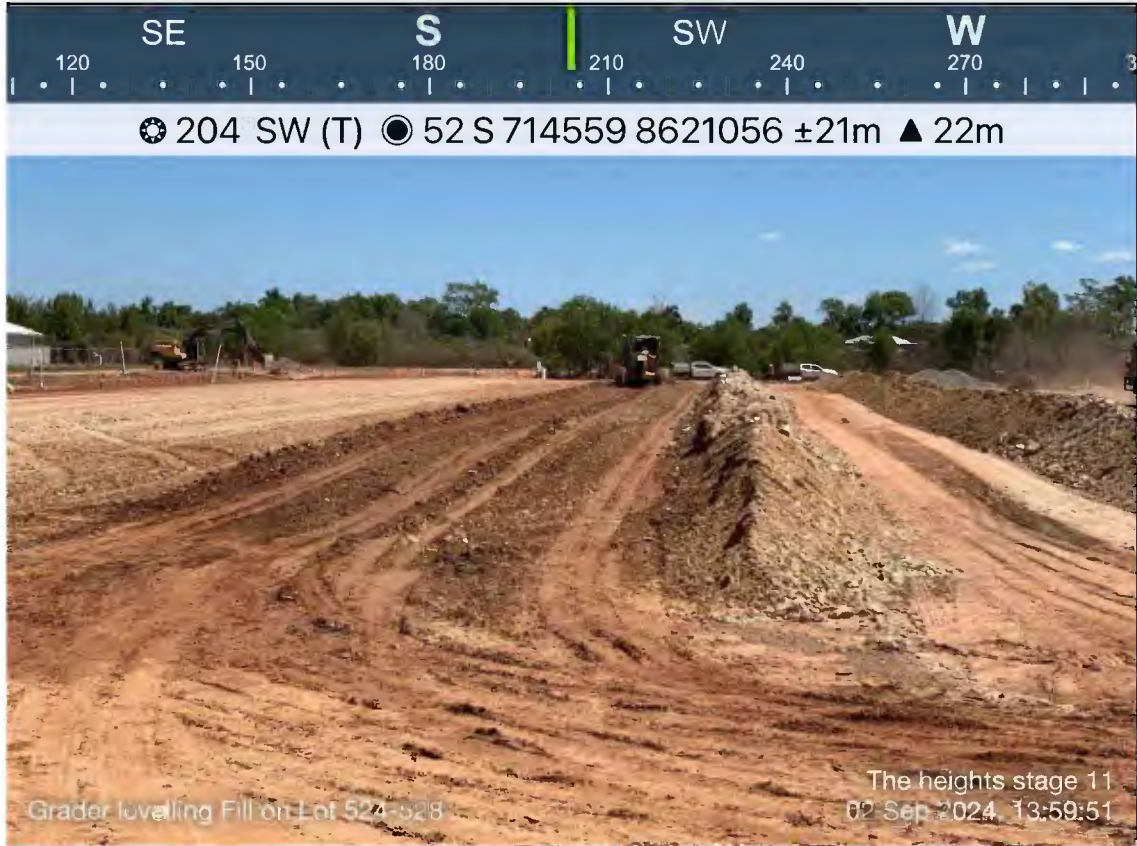


Photo 5 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		



Photo 6 -



Photo 7 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	09-Feb-24	
BMD Urban			



Photo 14 -



Photo 15 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		



Photo 12 -



Photo 13 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Mar-24		



Photo 16 -



Photo 17 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	09-Mar-24	
			BMD Urban



Photo 20 -



Photo 21 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		



Photo 18 -



Photo 19 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-May-24		



Photo 22 -



Photo 23 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		



Photo 28 -



Photo 29 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		



Photo 24 -



Photo 25 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		



Photo 26 -



Photo 27 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-May-24		



Photo 34 -



Photo 35 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		



Photo 30 -



Photo 31 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-May-24		



Photo 32 -



Photo 33 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Jun-24		

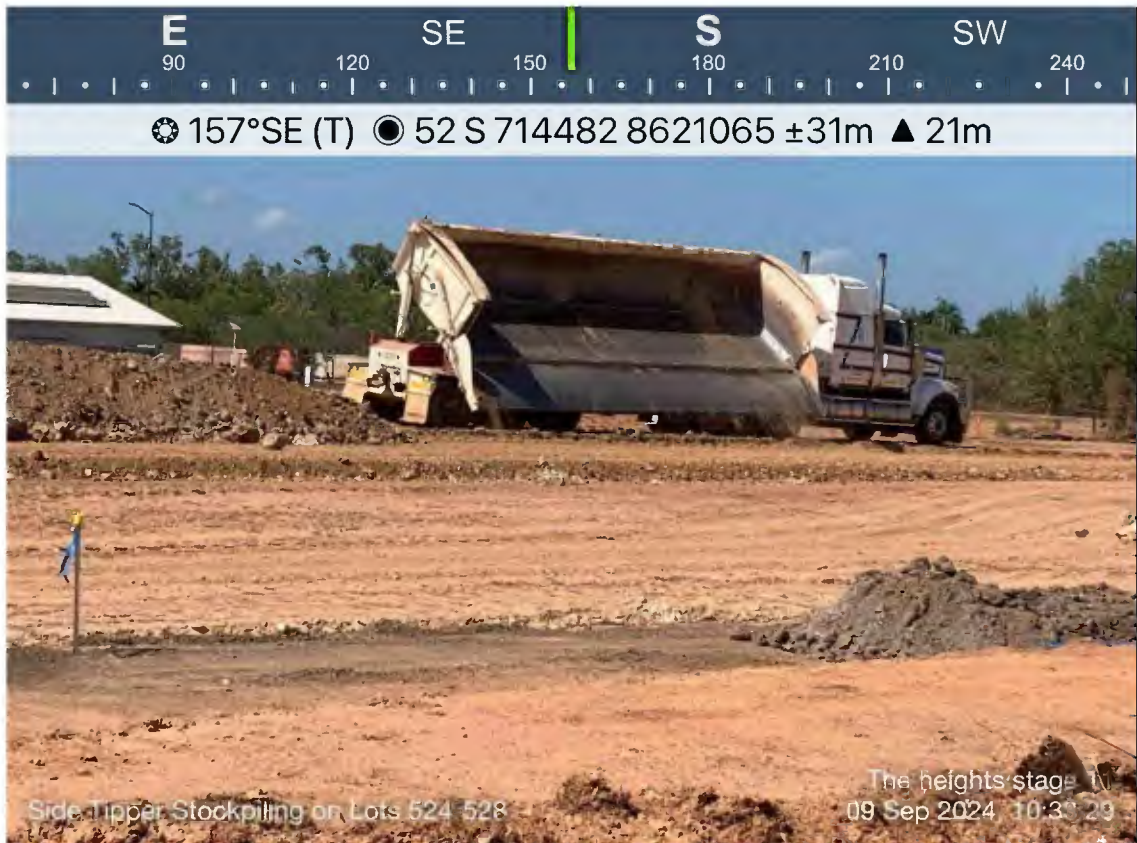


Photo 40 -



Photo 41 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Sep-24		



Photo 36 -



Photo 37 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		



Photo 38 -



Photo 39 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	09-Jun-24	
BMD Urban			



Photo 44 -



Photo 45 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Sep-24		



Photo 42 -



Photo 43 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A		

SW W NW N NE
 240 270 300 330 0 30

☉ 318°NW (T) ● 52 S 714480 8621016 ±4m ▲ 20m



Grader Levelling Fill on Lot 529 - 530 LY 1

The heights stage 11
 10 Sep 2024, 08:12:54

Photo 46 -

S SW W NW N
 180 210 240 270 300 330 0

☉ 269°W (T) ● 52 S 714558 8621094 ±5m ▲ 22m



Pad Foot Roller Compacting Lot 529 - 530

The heights stage 11
 10 Sep 2024, 08:44:42

Photo 47 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Sep-24		



Photo 50 -



Photo 51 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Nov-24		



Photo 48 -



Photo 49 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Oct-24		



Photo 52 -

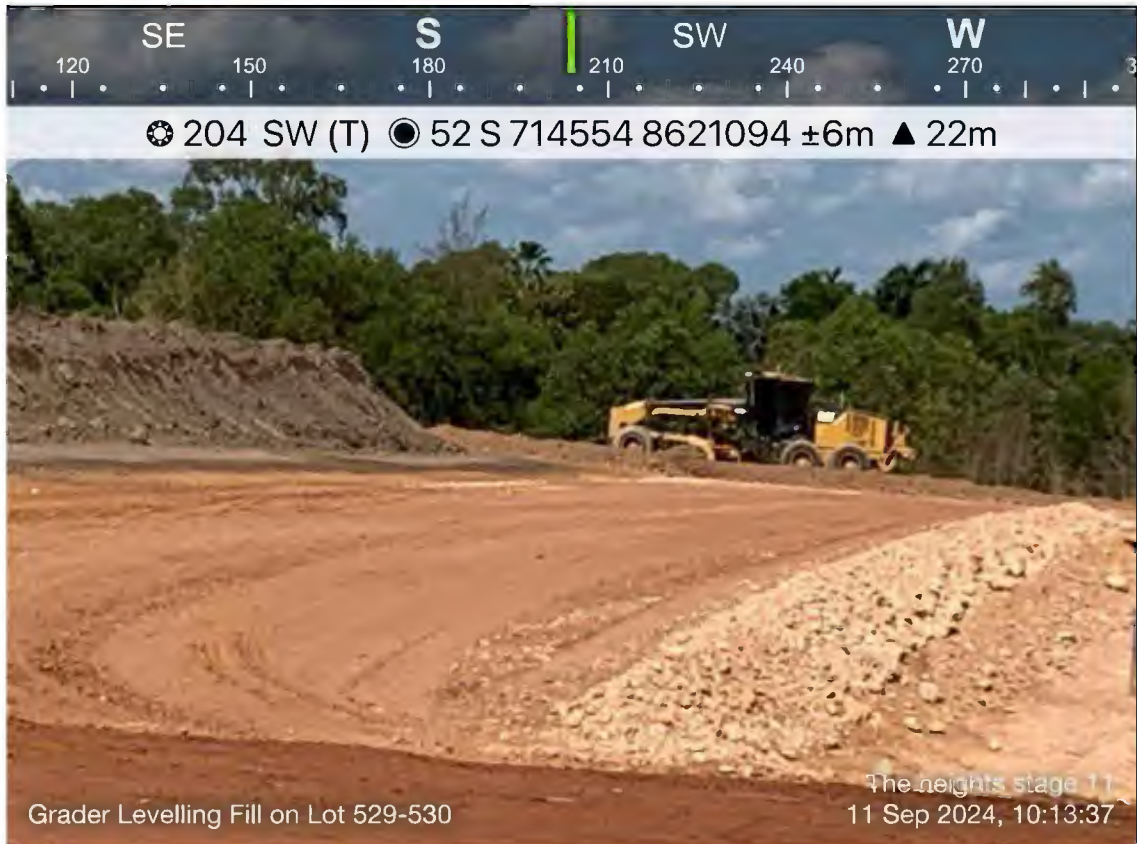


Photo 53 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Nov-24		



Photo 56 -



Photo 57 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Dec-24		



Photo 54 -



Photo 55 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Dec-24		



Photo 58 -



Photo 59 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 09-Dec-24		



Photo 64 -



Photo 65 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 23/09/2024 2:05		



Photo 60 -



Photo 61 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	13/09/2024 1:26	
		BMD Urban	



Photo 62 -

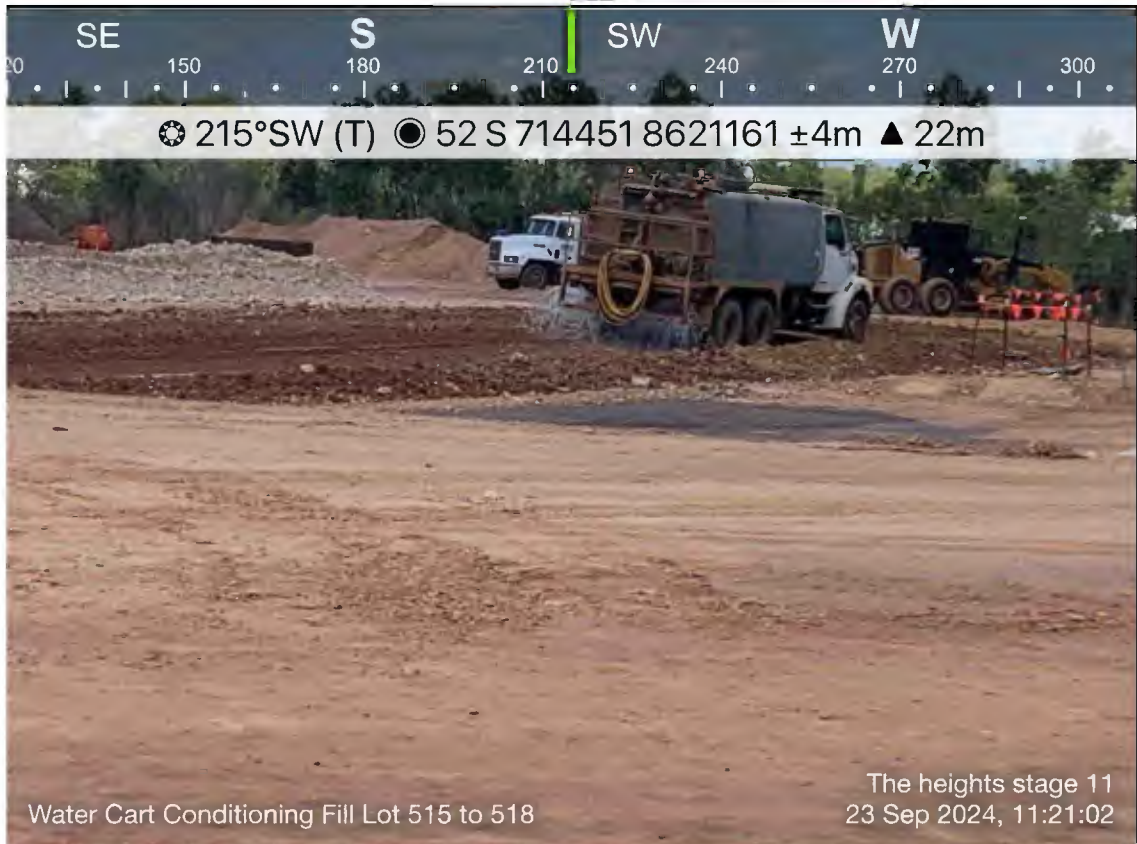


Photo 63 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 23/09/2024 1:49		



Photo 70 -



Photo 71 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 26/09/2024 5:37		



Photo 66 -



Photo 67 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 23/09/2024 3:13		



Photo 68 -

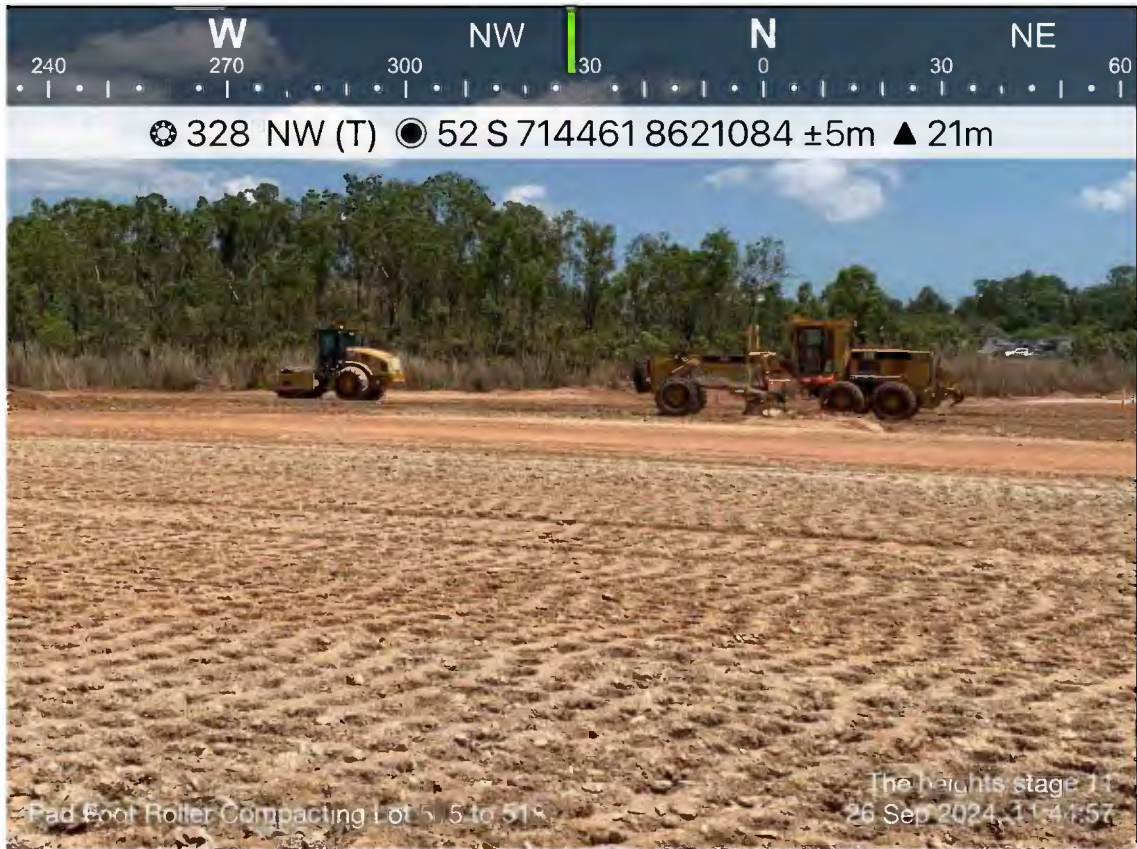


Photo 69 -

Project	The heights stage 11_2024		09-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 26/09/2024 2:14		



1 - The Heights Stage 11_2024-10-08_Grader Blade Mixing Fill_12-

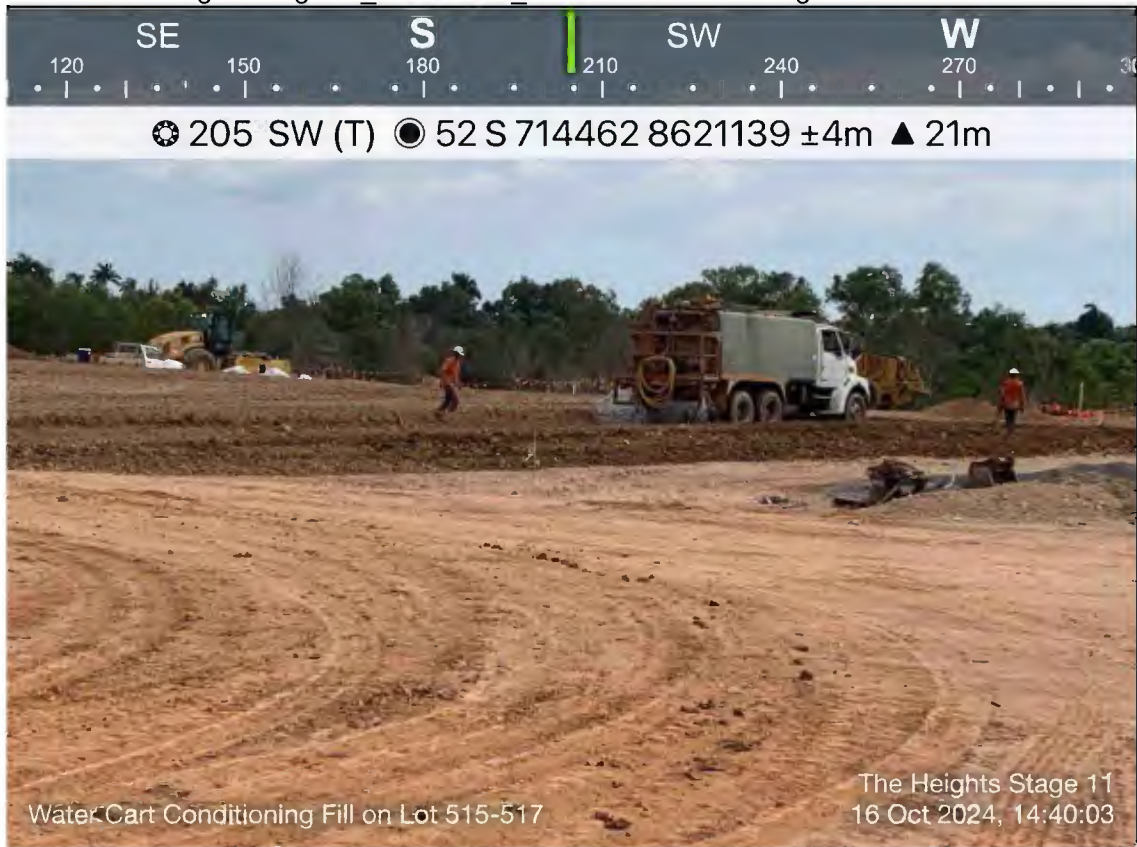


The Heights Stage 11_2024-10-16_Grader Mixing Fill on Lot 515-517

Project	The Heights Stage 11_2024		10-Jan-00
Ref	The Heights Stage 11 Level 1	BMD Urban	
By	HR		
Revision	A 10-Aug-24		



leights Stage 11_2024-10-16_Water Cart Conditioning Fill on Lot 515-517



leights Stage 11_2024-10-16_Water Cart Conditioning Fill on Lot 515-517

Project	The Heights Stage 11_2024		10-Jan-00
Ref	The Heights Stage 11 Level 1		
By	HR		
Revision	A	16/10/2024 5:09	
		BMD Urban	

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd **PROJECT NO:** 21791/P/1217
PROJECT: The Heights Durack - Stage 11 **DATE:** 21/08/2024
LOCATION: Durack **BY:** L. WELSH
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

1x Density Test Lot 501-502. Numbers looked low.
 • slow movements, One tipper delivering Import fill.
 • Grader prepping site.

Weather Conditions: Fine

Item 2 : SITE PLANT OPERATIONAL

Excavator ✓ Tipper Truck ✓
 Water Cart ✓ Pad Foot Roller
 Grader ✓ Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

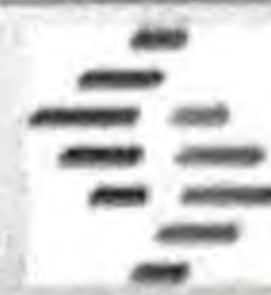
Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
1	Density	Lot 501 - 502	RL 21.656

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 8:00 (am/pm) **Time off Site:** 9:00 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 30 / 8 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Pad foot roller compacting lot 520-523
- stock piling on lot 518-515
- water cart conditioning fill on 518-515 and Grader mixing fill
- Grader leveling.
- Excavator placing fill in the trench
- Grader leveling fill in the trench and pad foot roller compacting each layer
- taking density tests on each layer.
- water cart conditioning trench to keep the moisture.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Lot. 519 - 523 LY2	LY2
3	Trench	trench foundation	Foundation
3	Trench	Trench LY1	LY1
3	Trench	Trench LY2	LY2
3	Trench	Trench LY3	LY3
3	Trench	Trench LY4	LY4

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Advise to keep the backfill (trench) moisture to a constant level by conditioning and mixing before placing it.

Time on Site: 8.00 (am/pm) Time off Site: 4.45 (am/pm)

SITE VISIT RECORD - EARTHWORKS



CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 29 / 08 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Water cart conditioning, Lot 520-523 L. side LY1
- Grader mixing and placing fill on above lots
- Pad foot Roller compacting above lots.
- Stock pilling on Lot 520-523 R. side. for second layer.
- stock pilling on lot 517-515.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

- Excavator
- Water Cart
- Grader
- Dozer
- Tipper Truck
- Pad Foot Roller
- Loader

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3.	Density.	Lot 520-523 L. side LY1	LY1

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 900 (am/pm) Time off Site: 1100 (am/pm)

SITE VISIT RECORD - EARTHWORKS



CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 28 / 08 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1: EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Working on Lot 520-523 R side LY1
- working on Lot 504-511 LY3
- Reworking on 520-523 because had low Nuc readings.
- conditioning, Mixing, compacting Lot 504-511
- pad foot roller compacting more on Lot 520-523.
- side tipper stockpiling on lots 504-511.
- Conditioning, Mixing, placing, compacting L Side LY1

Weather Conditions: fine

Item 2: SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3: PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4: MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Lot 507 to 511	LY3
3	Density	Lot 520 to 523 Right side LY1	LY1

Item 8: FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Lot 520 to 523 wet densities were low advise client to run few more rounds of pad foot roller on the above lots.

Time on Site: 9.30 (am/pm) Time off Site: 2.30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd **PROJECT NO:** 21791/P/1217
PROJECT: The Heights Durack - Stage 11 **DATE:** 27 / 9 / 2024
LOCATION: Durack **BY:** Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- slow movement.
 - did two density testing on below lots

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
2	Density	Lot 513 - 514 and Lot 511 - 512	LY2

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 9.00 (am/pm) **Time off Site:** 10.00 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd **PROJECT NO:** 21791/P/1217
PROJECT: The Heights Durack - Stage 11 **DATE:** 08 / 10 / 2024
LOCATION: Durack **BY:** Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- water cart conditioning
- Grader blade mixing fill
- pad foot compacting fill
- Mainly working on Lot S15 to S17 -LY6.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 11 00 (am/pm) **Time off Site:** 12 00 1.00 (am/pm)

SITE VISIT RECORD - EARTHWORKS



CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 27 / 08 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Stockpiling on lots 504 - 510
- Unsuitable material removed
- mixing stockpile on lot 520 to 523
- watercart conditioning fill
- No other work related to level-1 will be happening on the day other than stock piling and mixing material - these work are happening on the following lots 520 to 523 and 504 to 511

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator _____ Tipper Truck
 Water Cart Pad Foot Roller _____
 Grader Loader _____
 Dozer _____

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

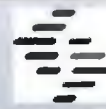
Test No.	Type	Sampling Location	Elevation
1	Quality	509 stock pile	-

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Lift -12
 Two lifts have been completed on lots 504 - 511.

Time on Site: 9.00 (am/pm) Time off Site: 10.30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd **PROJECT NO:** 21791/P/1217
PROJECT: The Heights Durack - Stage 11 **DATE:** 26 / 09 / 2024
LOCATION: Durack **BY:** Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Working on Lots S15-S17 , S15-S18 and Lot S11-S14
- water cart conditioning Lots , Grader blade mixing fill.
- grader placing fill
- pad foot roller compacting fill.

Weather Conditions: fine .

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart ✓ Pad Foot Roller ✓
 Grader ✓ Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

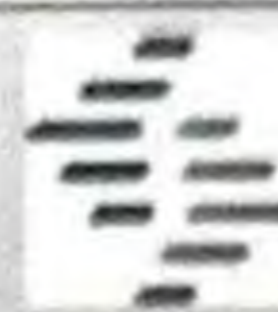
Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Lot. S20 to S23 LY4	LY4.

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 11:30 (am/pm) **Time off Site:** 3:30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 26 / 08/2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Water cart conditioning Lots (about 504 to 511) back half of the lots
- Grader levelling the above lots
- Laying the 1st lift on back half of the above lots
- Stockpiling front half of Lot 504 to 511
- Unsuitable material removed.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart ✓ Pad Foot Roller ✓
 Grader ✓ Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	504 to 511 front half of lots.	LY-2

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Front half of 504 to 511 lots , 2nd lift were placed and compacted on Saturday (24th Aug)

Time on Site: 10.00 (am/pm) Time off Site: 1400 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd **PROJECT NO:** 21791/P/1217
PROJECT: The Heights Durack - Stage 11 **DATE:** 25 / 10/2024
LOCATION: Durack **BY:** Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Two density test were done on Lot 513 - 514
- Working on Lots 520 to 523 to bring fill to the desired height on the above lots
- Grader mixing fill and placing
- Padfoot ~~roller~~ Roller compacting fill.

Weather Conditions:

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
2	Density	Lot 513-514 LY 5	LY 5

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 10.30 (am/pm) **Time off Site:** 11.00 (am/pm)

SITE VISIT RECORD - EARTHWORKS



CLIENT:	BMD Urban Pty Ltd	PROJECT NO:	21791/P/1217
PROJECT:	The Heights Durack - Stage 11	DATE:	24 / 9 / 2024
LOCATION:	Durack	BY:	Dilush . Anthonige
REQUESTED BY:	CMW Geosciences		

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Did two density testing on the work performed on 23rd
- 521 - 523 LS LY1 is a small pad towards the trench side (Healey Street)

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator	Tipper Truck
Water Cart	Pad Foot Roller
Grader	Loader
Dozer	

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
1	Density	Lot 521 - 523 LS LY1	LY1
1	Density	Lot 515 - 518 LY5	LY5

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 9.00 (am/pm) Time off Site: 10.30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
PROJECT: The Heights Durack - Stage 11 DATE: 23 / 9 / 2024
LOCATION: Durack BY: Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Lot 521-523 Edge where Healy street side, needed just a single lift to get to the desired height
- These lift density will be testing ~~on~~ tomorrow, 24th

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck ✓
Water Cart ✓ Pad Foot Roller ✓
Grader ✓ Loader
Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 11.00 (am/pm) Time off Site: 1.00 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 23 / 08 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Water cart conditioning Lots (front half of 504 to 511)
- Grader levelling fill.
- Padfoot Roller compacting the fill
- Stock piling material along the fence to place Lirt -1 on back half of the above Lots.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	504 to 511 front half of Lots	LY-1

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 9.00

(am/pm) 1.45 Time off Site:

10.30 (am/pm) 2.45

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT:	BMD Urban Pty Ltd	PROJECT NO:	21791/P/1217
PROJECT:	The Heights Durack - Stage 11	DATE:	21 / 10 / 2024
LOCATION:	Durack	BY:	Dilush . Anthonige
REQUESTED BY:	CMW Geosciences		

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- The lifts. had been completed over the weekend.
 - visiting the site. when Level-1 work hasp is in progress.

Weather Conditions:

Item 2 : SITE PLANT OPERATIONAL

Excavator	Tipper Truck
Water Cart	Pad Foot Roller
Grader	Loader
Dozer	

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

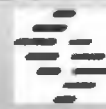
Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
2	Density	Lot 513 - 518 LY 5	LY 5
2	Density	Lot 513 - 514 LY 4	LY 4

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 1200 (am/pm) Time off Site: 1.30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd **PROJECT NO:** 21791/P/1217
PROJECT: The Heights Durack - Stage 11 **DATE:** 17 / 10 / 2024
LOCATION: Durack **BY:** Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Level 1 work remains slow.
- Visiting the site while level-1 work is in progress.
- They are focusing on small areas where only a few lifts needed in the remaining sections.
- The pit had been completed by the time I arrived at the site.

Weather Conditions: Fine

Item 2 : SITE PLANT OPERATIONAL

Excavator	Tipper Truck
Water Cart	Pad Foot Roller
Grader	Loader
Dozer	

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

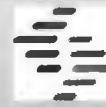
Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
1	Densit.	Lot 507 - S11 Edg2.	LY1.

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 2.15 (am/pm) **Time off Site:** 2.45 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd **PROJECT NO:** 21791/P/1217
PROJECT: The Heights Durack - Stage 11 **DATE:** 16 / 10 / 2024
LOCATION: Durack **BY:** Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Level 1 work is coming to an end soon, with only a few lifts needed, primarily around lots S15-S17 and lots S11-S14

- Progress on Level -1 work remains slow.

Weather Conditions: f.w

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Lot S15 - S16 LY7	

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 1200 (am/pm) **Time off Site:** 1:15 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
PROJECT: The Heights Durack - Stage 11 DATE: 15 / 10/2024
LOCATION: Durack BY: Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Water cart conditioning fill on Lot 515 - 517 and 8 Lot 513 - 514 LY3
- Grader mixing fill on the above lots.
- padfoot roller compacting above lots.
- Side tieper stock piling fill on lots 17 + 515

Weather Conditions:

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
Water Cart Pad Foot Roller
Grader Loader
Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 12.00 (am/pm) Time off Site: 2.30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 13 / 9 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Slow movement.
- working on Lot 527-529.
- Side tipper carting fill, Grader blade mixing, water cart conditioning fill, Grader placing fill and padfoot Roller compacting fill.
- from Lot 527 to 529 have a gradual incline so need a extra lift to get to the desired height.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator _____
 Water Cart _____
 Grader _____
 Dozer _____
 Tipper Truck _____
 Pad Foot Roller _____
 Loader _____

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
1	Density	Lot 529 - 527. LY4	

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 800 (am/pm) Time off Site: 1000 (am/pm)

SITE VISIT RECORD - EARTHWORKS



CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 12 / 19 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Workin on Lot 529 - 530 most of the work of the day on the above Lots.
- Water cart conditioning Lot; Grader blade mixing fill, Grader plating fill and pad foot roller compacting fill
- side tipper carting fill.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator _____ Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader _____
 Dozer _____

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Lot 529-530 LY3	LY3

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 9.15 (am/pm) Time off Site: 3.30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd **PROJECT NO:** 21791/P/1217
PROJECT: The Heights Durack - Stage 11 **DATE:** 11 / 10 / 2024
LOCATION: Durack **BY:** Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- 2x Density testing of lot# 524 - 528 LY 3.

Weather Conditions:

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

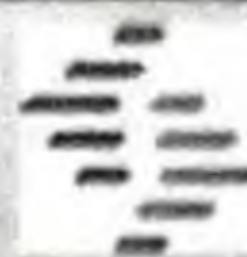
Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
2	Density	Lot 524-528	LY 3.

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 11.30 (am/pm) **Time off Site:** 12.00 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P11217
 PROJECT: The Heights Durack - Stage 11 DATE: 11 / 9 / 2024
 LOCATION: Durack BY: Dilush. Anthonige
 REQUESTED BY: CMW Geosciences

Item 1: EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- side tipper stock piling top soil on Lot 531-536.
- Working on Lot 529 - 530, Grader blade mixing fill, water cart conditioning fill, Pad foot roller compacting fill
- unsuitable material removed from top soil stock piles and on Lot 529 - 530.
- water cart conditioning fill of lots 520 - 519.

Weather Conditions: fine.

Item 2: SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3: PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4: MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

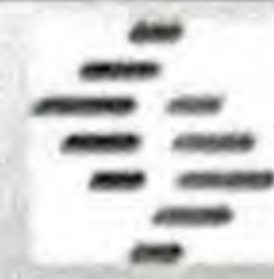
Test No.	Type	Sampling Location	Elevation
3	Density	Lot 529 - 530 LY2	LY2
3	Density	Lot 517, 520 - 523 LY4	LY4

Item 8: FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Much work was happening on lot 529 - 530

Time on Site: 8.00 (am/pm) Time off Site: 2.00 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 10 / 9 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Side tipper stock piling top soil on 12531-536.
- Working on multiple lots - Lot 529-530, Lot 520-523 LY4., Lot 515, 517
- side tipper stock piling, Grader blade mixing, water cart conditioning fill, Grader placing fill and pad foot compacting fill.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Lot 529 - 530 LY1	LY1

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 8.00 (am/pm) Time off Site: 2.30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



CLIENT: <u>BMD Urban Pty Ltd</u>	PROJECT NO: <u>21791/P/1217</u>
PROJECT: <u>The Heights Durack - Stage 11</u>	DATE: <u>9 / 10 / 2024</u>
LOCATION: <u>Durack</u>	BY: <u>Dilush . Anthonige</u>
REQUESTED BY: <u>CMW Geosciences</u>	

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- slow movement took 3 x Density on the Lots S15 to S17 finished yesterday 8th October.

Weather Conditions: fine

<p>Item 2 : SITE PLANT OPERATIONAL</p> <p>Excavator Tipper Truck Water Cart Pad Foot Roller Grader Loader Dozer</p>	<p>Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:</p>
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Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Lot S15 to S17 LY6	LY6

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 9.00 (am/pm) Time off Site: 1200 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd **PROJECT NO:** 21791/P/1217
PROJECT: The Heights Durack - Stage 11 **DATE:** 08 / 10 / 2024
LOCATION: Durack **BY:** Dilush . Anthonige
REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- water cart conditioning
- Grader blade mixing fill
- pad foot compacting fill
- Mainly working on Lot S15 to S17 -LY6.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

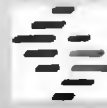
Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 11 00 (am/pm) **Time off Site:** 12 40 1.00 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT:	BMD Urban Pty Ltd	PROJECT NO:	21791/P/1217
PROJECT:	The Heights Durack - Stage 11	DATE:	08 / 10 / 2024
LOCATION:	Durack	BY:	Dilush . Anthonige
REQUESTED BY:	CMW Geosciences		

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- water cart conditioning
- grader blade mixing fill
- pad foot compacting fill
- Mainly working on Lot S15 to S17 -LY6.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

- | | |
|--------------|-------------------|
| Excavator | Tipper Truck |
| Water Cart ✓ | Pad Foot Roller ✓ |
| Grader ✓ | Loader |
| Dozer | |

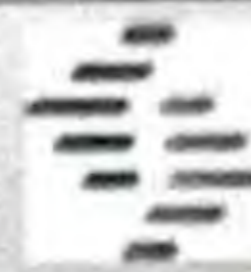
Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 6 / 9 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Working on Lot 524 - 528 LY2. Pad foot Roller compacting Grader levelling fill
- Grader blade mixing fill on Lots 515 - 517, Water cart conditioning
- unsuitable material removed.
- Side tipper stockpiling along 524 - 528 Lots.
- Working on Lots 515 - 517 and 512 - 514.
- Side tipper stock pilling on 512 - 514 lots for LY2.

Weather Conditions: fine.

Item 2 : SITE PLANT OPERATIONAL

Excavator	Tipper Truck
Water Cart	Pad Foot Roller
Grader	Loader
Dozer	

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

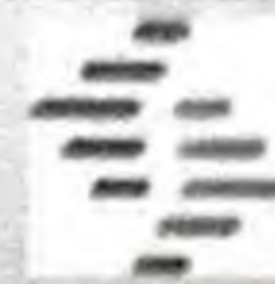
Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Lot 512 - 514 LY1	LY1

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 9.00 (am/pm) Time off Site: 2.30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



Construction Sciences

CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 5 / 9 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Side tipper stock piling on Lots 518-515, Grader blade mixing, water cart conditioning pad foot compacting above lots
- same time work was underway on Lots 524-528.
- mostly, carting fill, conditioning, mixing and placing on above lots.
- unsuitable material removed.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density.	Lot 515-518 LY2	LY2
3	Density	Lot 524-528 LY2	LY2

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 10.00 (am/pm) Time off Site: 2.30 (am/pm)

SITE VISIT RECORD - EARTHWORKS



CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 3 / 9 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1 : EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Grader levelling fill, - Pad foot roller compacting fill on lot 515 - 518.
- Side tipper stockpiling on Lot 523 - 520.
- Unsuitable materials removed.
- Water cart conditioning lots 536 - 531, and 524 - 528.
- Pad foot compacting lot 531 - 536 LY2.

Weather Conditions: fine

Item 2 : SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3 : PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4 : MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Lot 519 - 523 LY3	LY3
3	Density	Lot 532 - 536 LY1	LY1

Item 8 : FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

- Oversize and unsuitable material removals.

Time on Site: 7.30 (am/pm) Time off Site: 2.00 (am/pm)

SITE VISIT RECORD - EARTHWORKS



CLIENT: BMD Urban Pty Ltd PROJECT NO: 21791/P/1217
 PROJECT: The Heights Durack - Stage 11 DATE: 02 / 19 / 2024
 LOCATION: Durack BY: Dilush . Anthonige
 REQUESTED BY: CMW Geosciences

Item 1: EARTHWORKS/PAVEMENT /STRIPPING PROGRESS

- Have stock piled on lot 519 - 523 for Layer 3
- working on Lot. 532 - 536
- working on Lot 515 - 517 LY1
- Grader placing fill, padfoot compacting, water cart conditioning fill on 532 - 536. and 524 - 528.
- Placing material on 519 - 523. Grader mixing, water cart conditioning. Grader placing fill
- compacting fill by pad foot roller on above lots.
- working on all above mentioned lots on the day.

Weather Conditions: fine

Item 2: SITE PLANT OPERATIONAL

Excavator Tipper Truck
 Water Cart Pad Foot Roller
 Grader Loader
 Dozer

Item 3: PHOTO LOG (Photos should be date imprinted) CAMERA:

Item 4: MATERIALS CLASSIFICATION / RELATIVE COMPACTION FIELD TESTING

Test No.	Type	Sampling Location	Elevation
3	Density	Trench LY5	LY5
3	Density	Trench LY6	LY6
3	Densit.	Lot 515 - 517 LY1	LY1

Item 8: FURTHER REMARKS: Instructions/Advice - (received or given). Meetings/Conversations

Time on Site: 1000 (am/pm) Time off Site: 3-30 (am/pm)

APPENDIX C

Laboratory Test Certificates



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/72895-1
Client Address: PO BOX 197, Wynnnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 504 - 511
Location: Darwin	Internal Test Request: 21791/T/30503
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 29/08/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/167775	21791/S/167776	21791/S/167777	
ID / Client ID	-	-	-	
Lot Number	Lot 504 - 511	Lot 504 - 511	Lot 504 - 511	
Date / Time Tested	23/08/2024 13:50	23/08/2024 14:05	23/08/2024 14:20	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	71445.253	714487.074	714521.824	
N:	8621136.870	8621120.310	8621100.955	
RL: (m)	21.587	21.725	21.695	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	0 / 0	0 / 0	0 / 0	
MDR Sample Number	21791/S/167775	21791/S/167776	21791/S/167777	
MDR Sample Date / Update	23/08/2024	23/08/2024	23/08/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	11.1	11.0	11.5	
Optimum Moisture Content (%)	11.0	11.0	12.5	
Variation from OMC (%)	Field Moisture at OMC	0.0% Wetter than OMC	1.0% Drier than OMC	
Moisture Ratio (%)	100.0	101.0	92.5	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.31	2.35	2.35	
Field Dry Density (t/m ³)	2.08	2.12	2.10	
Maximum Dry Density (t/m ³)	2.10	2.12	2.12	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	99.0	100.0	99.0	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

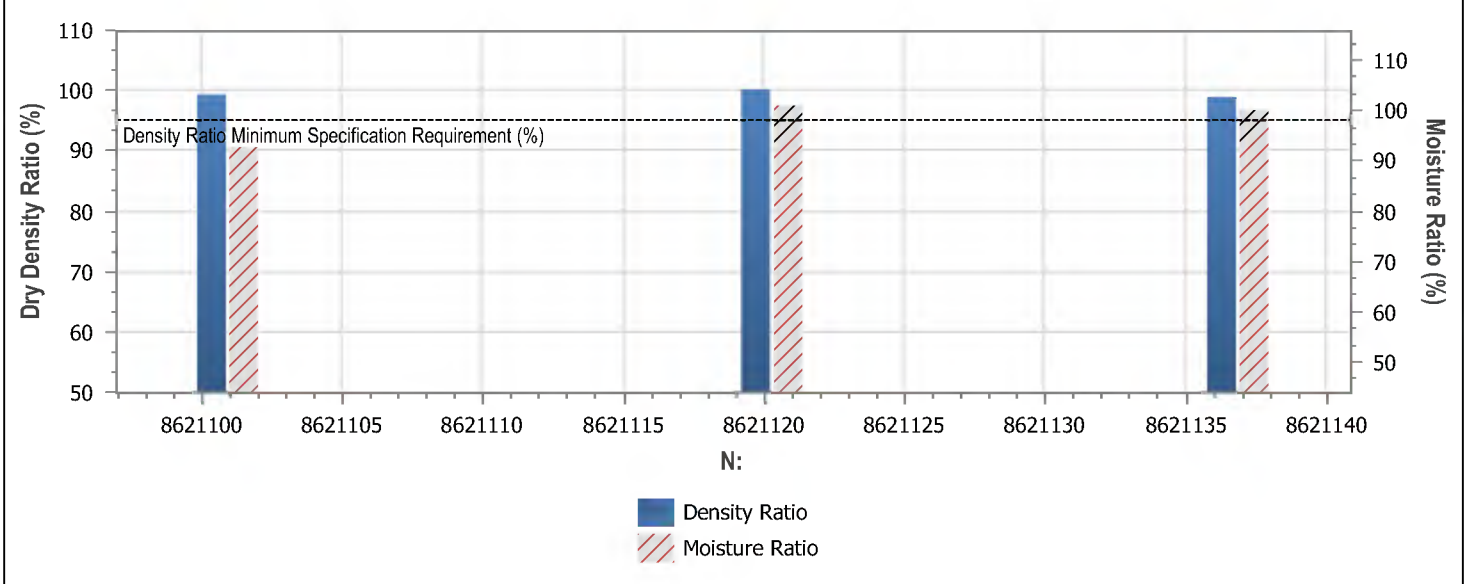
Client: BMD Urban Pty Ltd	Report Number: 21791/R/72895-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 504 - 511
Location: Darwin	Internal Test Request: 21791/T/30503
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 29/08/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	92.7	100.9	97.9	4.497
Dry Density Ratio (%)	98.8	100.1	99.4	0.666

Lot Number:	Lot 504 - 511
Mean Moisture Ratio (%):	97.9
Mean Density Ratio (%):	99.4

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnun Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/72960-1 Project Number: 21791/P/1241 Lot Number: Lot 501 - 503 Internal Test Request: 21791/T/30472 Client Reference/s: Level 1 Report Date / Page: 2/09/2024 Page 1 of 1
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/167612		
ID / Client ID	-		
Lot Number	Lot 501 - 503		
Date / Time Tested	21/08/2024		
Material Source	Imported Fill		
Material Type	General Fill		
Sampling Method	AS1289.1.2.1 Cl 6.4b		
Depths: Test / Nom / Actual (mm)	175 / 200 / 200		
Standard or Modified	Modified		
Stabilised Material Curing Time	-		
E:	714597.480		
N:	8621059.668		
RL: (m)	21.656		
Test Fraction (mm)	< 19.0 mm		
Sample Oversize Wet / Dry (%)	0 / 0		
MDR Sample Number	21791/S/167612		
MDR Sample Date / Update	21/08/2024		
Assigned MDR (Yes / No)	No		
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	10.5		
Optimum Moisture Content (%)	11.0		
Variation from OMC (%)	0.5% Drier than OMC		
Moisture Ratio (%)	97.0		
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.21		
Field Dry Density (t/m ³)	2.00		
Maximum Dry Density (t/m ³)	2.17		
Dry Density Ratio Required (%)	95		
Dry Density Ratio (%)	92.0		

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing		
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W27ASRep Rev 1



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/72961-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 504 - 511 - LY2
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 2/09/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/167843	21791/S/167844	21791/S/167845
ID / Client ID	-	-	-
Lot Number	Lot 504 - 511 - LY2	Lot 504 - 511 - LY2	Lot 504 - 511 - LY2
Date / Time Tested	26/08/2024 11:00	26/08/2024 11:15	26/08/2024 11:30
Material Source	Imported Fill	Imported Fill	Imported Fill
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	Modified	Modified	Modified
Stabilised Material Curing Time	-	-	-
E:	714444.099	714482.710	714518.043
N:	8621134.540	8621120.618	8621103.404
RL: (m)	21.748	22.110	21.924
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet / Dry (%)	0 / 0	0 / 0	0 / 0
MDR Sample Number	21791/S/167843	21791/S/167844	21791/S/167845
MDR Sample Date / Update	26/08/2024	26/08/2024	26/08/2024
Assigned MDR (Yes / No)	No	No	No
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	9.5	10.5	10.0
Optimum Moisture Content (%)	10.5	11.0	10.0
Variation from OMC (%)	1.0% Drier than OMC	0.5% Drier than OMC	0.0% Drier than OMC
Moisture Ratio (%)	92.0	96.5	98.0
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.28	2.28	2.29
Field Dry Density (t/m ³)	2.08	2.06	2.08
Maximum Dry Density (t/m ³)	2.10	2.10	2.09
Dry Density Ratio Required (%)	95	95	95
Dry Density Ratio (%)	99.5	98.0	99.5

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

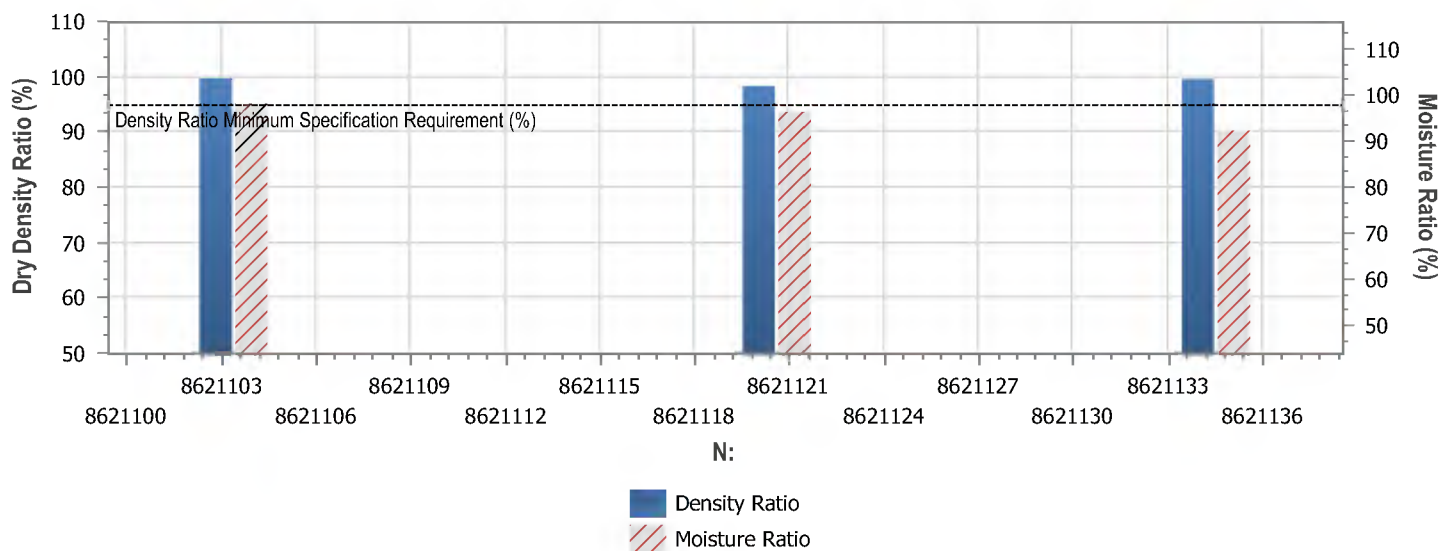
Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/72961-1 Project Number: 21791/P/1241 Lot Number: Lot 504 - 511 - LY2 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 2/09/2024 Page 2 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		

LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	92.2	98.0	95.5	2.982
Dry Density Ratio (%)	98.2	99.6	99.1	0.757

Lot Number:	Lot 504 - 511 - LY2
Mean Moisture Ratio (%):	95.5
Mean Density Ratio (%):	99.1

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing



Accreditation Number: 1986
 Corporate Site Number: 21791

Approved Signatory: Zack Rayner
 Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/72962-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 507 - 511 - LY3
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 2/09/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/167956	21791/S/167957	21791/S/167958
ID / Client ID	-	-	-
Lot Number	Lot 507 - 511 - LY3	Lot 507 - 511 - LY3	Lot 507 - 511 - LY3
Date / Time Tested	28/08/2024 09:00	28/08/2024 09:10	28/08/2024 09:20
Material Source	Imported Fill	Imported Fill	Imported Fill
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	Modified	Modified	Modified
Stabilised Material Curing Time	-	-	-
E:	14452.093	14470.001	14510.023
N:	21123.747	21115.228	21119.321
RL: (m)	22.198	22.206	22.202
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet / Dry (%)	4 / 4	3 / 3	4 / 5
MDR Sample Number	21791/S/167956	21791/S/167957	21791/S/167958
MDR Sample Date / Update	28/08/2024	28/08/2024	28/08/2024
Assigned MDR (Yes / No)	No	No	No
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	10.1	10.8	10.4
Optimum Moisture Content (%)	9.0	10.0	9.5
Variation from OMC (%)	1.0% Wetter than OMC	1.0% Wetter than OMC	1.0% Wetter than OMC
Moisture Ratio (%)	110.0	110.0	108.5
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.27	2.29	2.29
Field Dry Density (t/m ³)	2.06	2.06	2.08
Maximum Dry Density (t/m ³)	2.12	2.11	2.10
Dry Density Ratio Required (%)	95	95	95
Dry Density Ratio (%)	97.5	98.0	99.0

Remarks

<div style="text-align: center;">Accredited for compliance with ISO/IEC 17025 – Testing</div>  <p>Accreditation Number: 1986 Corporate Site Number: 21791</p>	 <p>Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3</p>
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LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

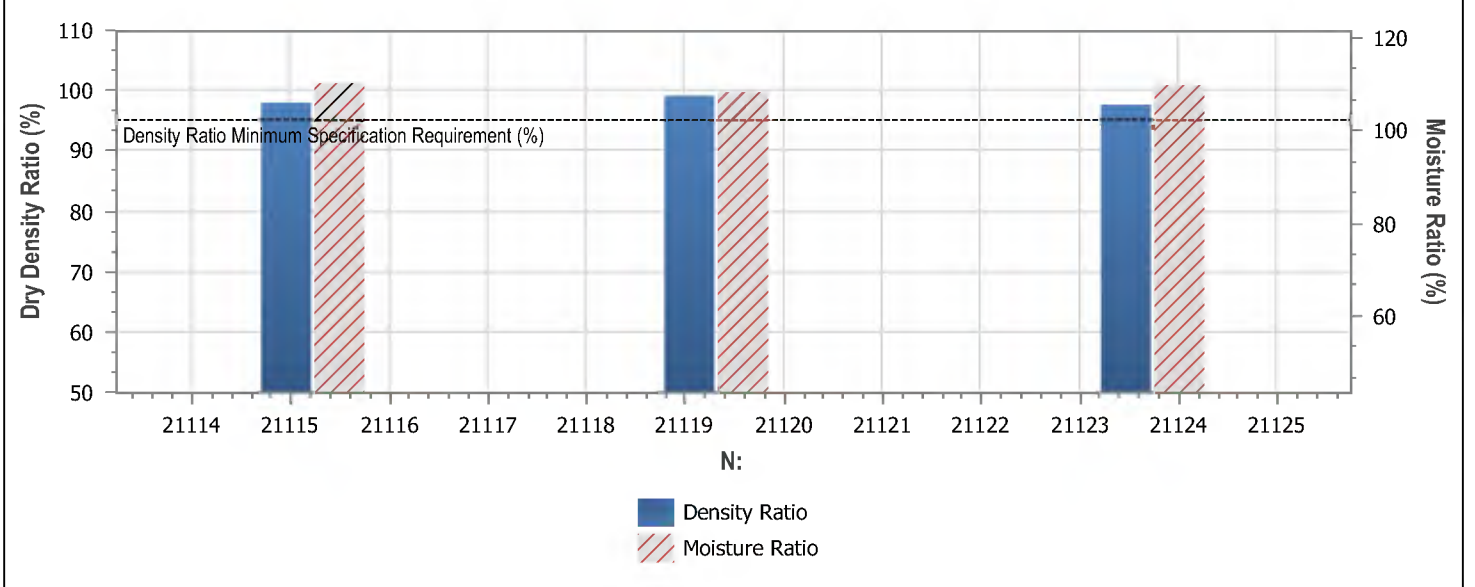
Client: BMD Urban Pty Ltd	Report Number: 21791/R/72962-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 507 - 511 - LY3
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 2/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	108.3	110.2	109.4	1.002
Dry Density Ratio (%)	97.6	99.0	98.2	0.737

Lot Number:	Lot 507 - 511 - LY3
Mean Moisture Ratio (%):	109.4
Mean Density Ratio (%):	98.2

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/72963-1 Project Number: 21791/P/1241 Lot Number: Lot 520 - 520 R.Side LY 1 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 2/09/2024 Page 1 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/167959	21791/S/167960	21791/S/167961	
ID / Client ID	-	-	-	
Lot Number	Lot 520 - 520 R.Side LY 1	Lot 520 - 520 R.Side LY 1	Lot 520 - 520 R.Side LY 1	
Date / Time Tested	28/08/2024 12:00	28/08/2024 12:10	28/08/2024 12:45	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14463.241	14441.861	14441.698	
N:	21076.303	21067.310	21049.143	
RL: (m)	20.692	20.664	20.343	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	0 / 0	0 / 0	0 / 0	
MDR Sample Number	21791/S/167959	21791/S/167960	21791/S/167961	
MDR Sample Date / Update	28/08/2024	28/08/2024	28/08/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	11.2	10.8	9.9	
Optimum Moisture Content (%)	11.0	10.5	10.0	
Variation from OMC (%)	0.5% Wetter than OMC	0.0% Wetter than OMC	0.5% Drier than OMC	
Moisture Ratio (%)	103.0	101.0	97.0	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.34	2.31	2.34	
Field Dry Density (t/m ³)	2.10	2.09	2.13	
Maximum Dry Density (t/m ³)	2.11	2.12	2.13	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	100.0	98.5	100.0	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

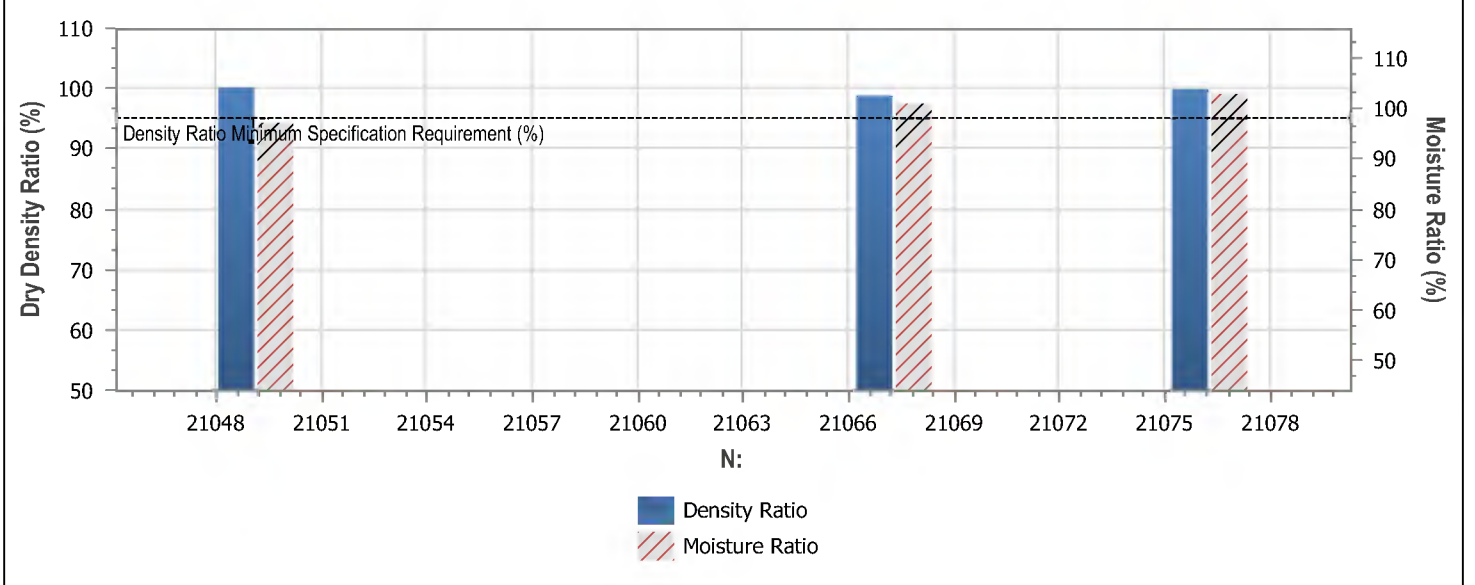
Client: BMD Urban Pty Ltd	Report Number: 21791/R/72963-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 520 - 520 R.Side LY 1
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 2/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	97.1	102.8	100.3	2.902
Dry Density Ratio (%)	98.7	100.1	99.5	0.737

Lot Number:	Lot 520 - 520 R.Side LY 1
Mean Moisture Ratio (%):	100.3
Mean Density Ratio (%):	99.5

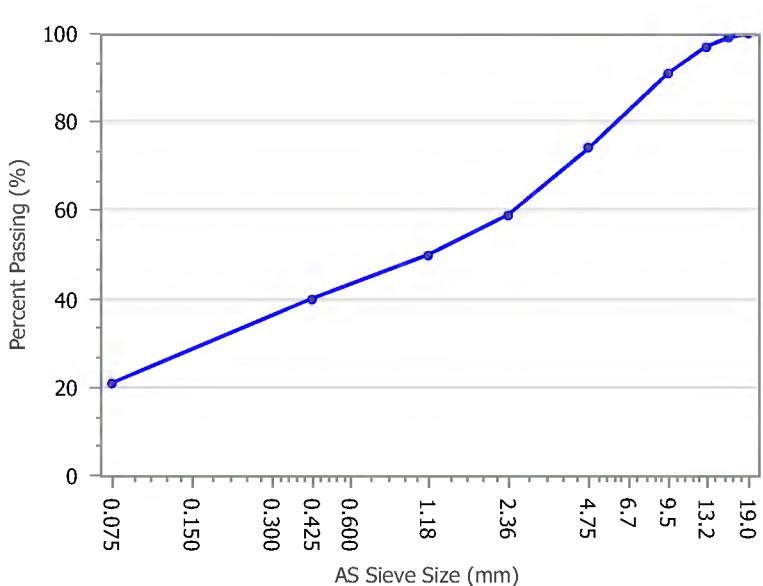
Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3

QUALITY OF MATERIALS REPORT



Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/72968-1 Project Number: 21791/P/1241 Lot Number: On site Stockpile Internal Test Request: 21791/T/30472 Client Reference/s: Level 1 Report Date / Page: 2/09/2024 Page 1 of 2
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/167613 Sampling Method AS1289.1.2.1 CI 6.2 Date Sampled 22/08/2024 Sampled By Liam Welsh Date Tested 26/08/2024 Drying Methods PSD: / ATT:Oven Dried Atterberg Preparation Dry Sieved	Stockpile 1 Southern End Material Source Imported Fill Material Type General Fill Material Description Gen fill

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)	
19.0		100		PARTICLE SIZE DISTRIBUTION GRAPH 
16.0		99		
13.2		97		
9.5		91		
4.75		74		
2.36		59		
1.18		50		
0.425		40		
0.075		21		

Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		24		0.075/0.425 Fines Ratio		0.52	
Plastic Limit (%)		13		PI x 0.425 Ratio (%)		444.4	
Plastic Index (%)	2	11	15	LS x 0.425 Ratio (%)		181.8	
Linear Shrinkage (%)		4.5		Particle Size Dist. Moisture Content (%)		7.2	
Shrinkage Observations	Cracking						

Remarks

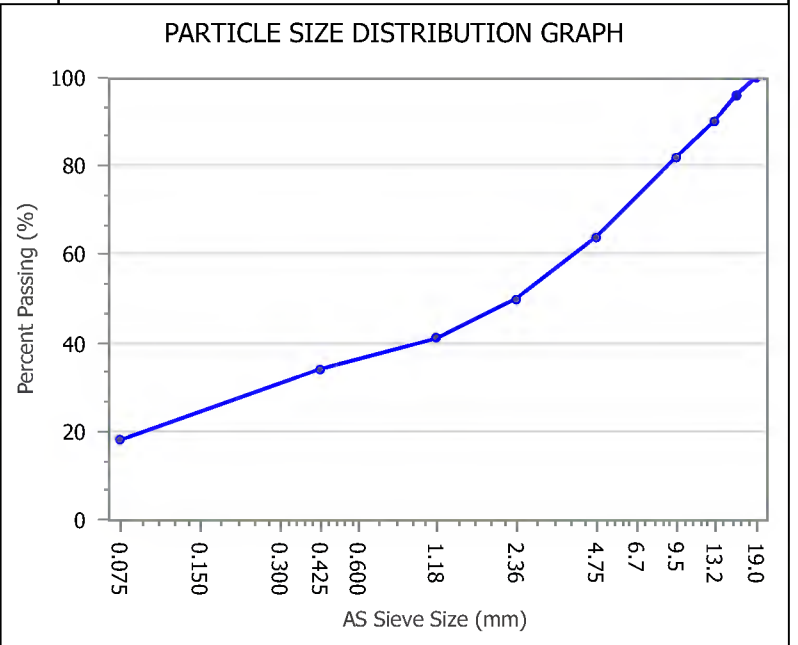
Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W85MCRP Rev 2

QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/72968-1 Project Number: 21791/P/1241 Lot Number: On site Stockpile Internal Test Request: 21791/T/30472 Client Reference/s: Level 1 Report Date / Page: 2/09/2024 Page 2 of 2
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/167614 Sampling Method AS1289.1.2.1 CI 6.2 Date Sampled 22/08/2024 Sampled By Liam Welsh Date Tested 26/08/2024 Drying Methods PSD / ATT:Oven Dried Atterberg Preparation Dry Sieved	Stockpile 1 Northern End Material Source Imported Fill Material Type General Fill Material Description General fill

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
19.0		100	
16.0		96	
13.2		90	
9.5		82	
4.75		64	
2.36		50	
1.18		41	
0.425		34	
0.075		18	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		25		0.075/0.425 Fines Ratio		0.52	
Plastic Limit (%)		14		PI x 0.425 Ratio (%)		372.9	
Plastic Index (%)	2	11	15	LS x 0.425 Ratio (%)		169.5	
Linear Shrinkage (%)		5.0		Particle Size Dist. Moisture Content (%)		8.9	
Shrinkage Observations	N/A						

Remarks

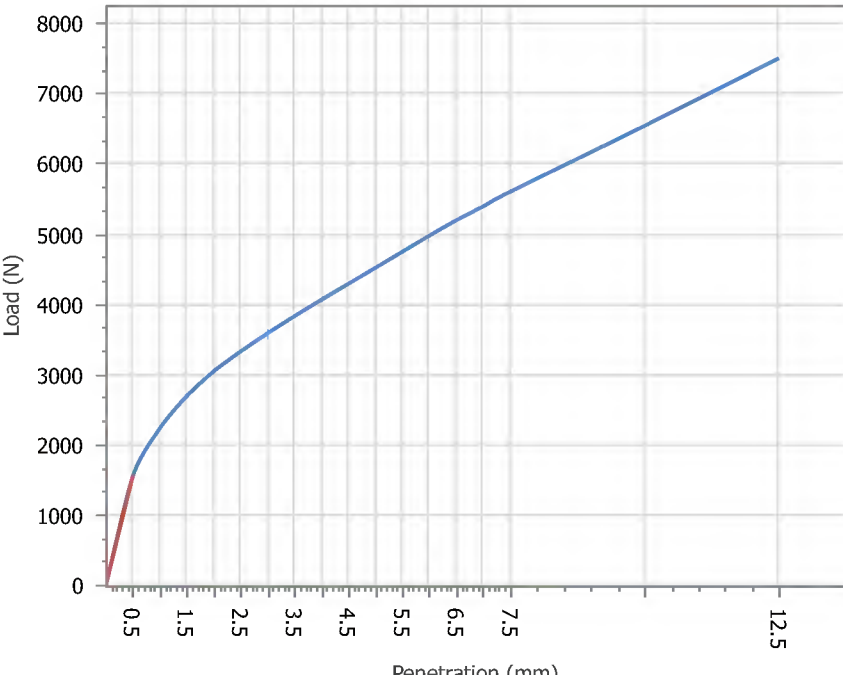
	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W85MCRP Rev 2

CALIFORNIA BEARING RATIO REPORT



Client: BMD Urban Pty Ltd	Report Number: 21791/R/73079-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: On site Stockpile
Location: Darwin	Internal Test Request: 21791/T/30472
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 5/09/2024 Page 1 of 1

Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/167613	Stockpile 1 Southern End
Sampling Method AS1289.1.2.1 CI 6.2	
Date Sampled 22/08/2024	
Sampled By Liam Welsh	
Date Tested 2/09/2024	Prep Material > 53mm (%) -
Material Source Imported Fill	Material Limit Start -
Material Type General Fill	Material Limit End -
Client Reference -	Compactive Effort Modified

Material Description GC Sandy Clayey Gravel, low plasticity

<table style="width: 100%; border-collapse: collapse;"> <tr><td>Maximum Dry Density (t/m³):</td><td style="text-align: right;">2.14</td></tr> <tr><td>Optimum Moisture Content (%):</td><td style="text-align: right;">9.5</td></tr> <tr><td>Field Moisture Content (%):</td><td style="text-align: right;">7.2</td></tr> <tr><td>Sample Percent Oversize (%):</td><td style="text-align: right;">0.0</td></tr> <tr><td>Oversize Included / Excluded</td><td style="text-align: right;">Excluded</td></tr> <tr><td>Target Density Ratio (%):</td><td style="text-align: right;">95</td></tr> <tr><td>Target Moisture Ratio (%):</td><td style="text-align: right;">100</td></tr> <tr><td>Placement Dry Density (t/m³):</td><td style="text-align: right;">2.03</td></tr> <tr><td>Placement Dry Density Ratio (%):</td><td style="text-align: right;">95.5</td></tr> <tr><td>Placement Moisture Content (%):</td><td style="text-align: right;">9.0</td></tr> <tr><td>Placement Moisture Ratio (%):</td><td style="text-align: right;">95.5</td></tr> <tr><td>Test Condition / Soaking Period:</td><td style="text-align: right;">Soaked / 4 Days</td></tr> <tr><td>CBR Surcharge (kg)</td><td style="text-align: right;">4.5</td></tr> <tr><td>Dry Density After Soak (t/m³):</td><td style="text-align: right;">2.03</td></tr> <tr><td>Total Curing Time (hrs)</td><td style="text-align: right;">71</td></tr> <tr><td>Liquid Limit Method</td><td style="text-align: right;">Estimation</td></tr> <tr><td>Moisture (top 30mm) After Soak (%)</td><td style="text-align: right;">10.8</td></tr> <tr><td>Moisture (remainder) After Soak (%)</td><td style="text-align: right;">11.4</td></tr> <tr><td>CBR Swell (%):</td><td style="text-align: right;">0.5</td></tr> <tr><td>Minimum CBR Specification (%):</td><td style="text-align: right;">-</td></tr> <tr><td>CBR Value @ 2.5mm (%):</td><td style="text-align: right;">25</td></tr> </table>	Maximum Dry Density (t/m ³):	2.14	Optimum Moisture Content (%):	9.5	Field Moisture Content (%):	7.2	Sample Percent Oversize (%):	0.0	Oversize Included / Excluded	Excluded	Target Density Ratio (%):	95	Target Moisture Ratio (%):	100	Placement Dry Density (t/m ³):	2.03	Placement Dry Density Ratio (%):	95.5	Placement Moisture Content (%):	9.0	Placement Moisture Ratio (%):	95.5	Test Condition / Soaking Period:	Soaked / 4 Days	CBR Surcharge (kg)	4.5	Dry Density After Soak (t/m ³):	2.03	Total Curing Time (hrs)	71	Liquid Limit Method	Estimation	Moisture (top 30mm) After Soak (%)	10.8	Moisture (remainder) After Soak (%)	11.4	CBR Swell (%):	0.5	Minimum CBR Specification (%):	-	CBR Value @ 2.5mm (%):	25	<h3>CBR PENETRATION PLOT</h3>  <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td style="text-align: center;">8000</td></tr> <tr><td style="text-align: center;">7000</td></tr> <tr><td style="text-align: center;">6000</td></tr> <tr><td style="text-align: center;">5000</td></tr> <tr><td style="text-align: center;">4000</td></tr> <tr><td style="text-align: center;">3000</td></tr> <tr><td style="text-align: center;">2000</td></tr> <tr><td style="text-align: center;">1000</td></tr> <tr><td style="text-align: center;">0</td></tr> </table> <p style="text-align: center;">Penetration (mm)</p>	8000	7000	6000	5000	4000	3000	2000	1000	0
Maximum Dry Density (t/m ³):	2.14																																																			
Optimum Moisture Content (%):	9.5																																																			
Field Moisture Content (%):	7.2																																																			
Sample Percent Oversize (%):	0.0																																																			
Oversize Included / Excluded	Excluded																																																			
Target Density Ratio (%):	95																																																			
Target Moisture Ratio (%):	100																																																			
Placement Dry Density (t/m ³):	2.03																																																			
Placement Dry Density Ratio (%):	95.5																																																			
Placement Moisture Content (%):	9.0																																																			
Placement Moisture Ratio (%):	95.5																																																			
Test Condition / Soaking Period:	Soaked / 4 Days																																																			
CBR Surcharge (kg)	4.5																																																			
Dry Density After Soak (t/m ³):	2.03																																																			
Total Curing Time (hrs)	71																																																			
Liquid Limit Method	Estimation																																																			
Moisture (top 30mm) After Soak (%)	10.8																																																			
Moisture (remainder) After Soak (%)	11.4																																																			
CBR Swell (%):	0.5																																																			
Minimum CBR Specification (%):	-																																																			
CBR Value @ 2.5mm (%):	25																																																			
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Remarks

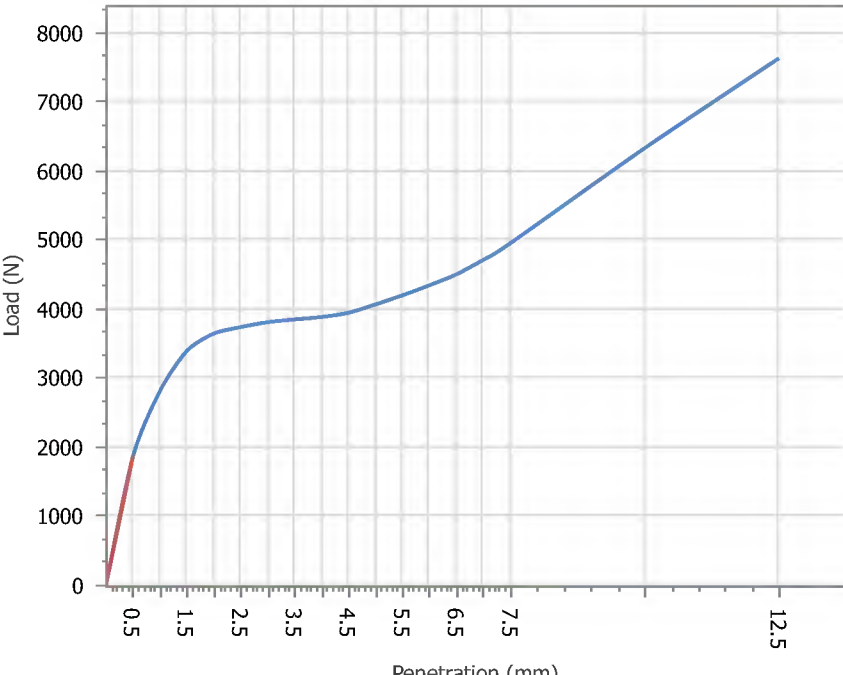
	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3

CALIFORNIA BEARING RATIO REPORT



Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73080-1 Project Number: 21791/P/1241 Lot Number: On site Stockpile Internal Test Request: 21791/T/30472 Client Reference/s: Level 1 Report Date / Page: 5/09/2024 Page 1 of 1
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Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/167614 Sampling Method AS1289.1.2.1 CI 6.2 Date Sampled 22/08/2024 Sampled By Liam Welsh Date Tested 2/09/2024 Material Source Imported Fill Material Type General Fill Client Reference -	Stockpile 1 Northern End Prep Material > 53mm (%) - Material Limit Start - Material Limit End - Compactive Effort Modified

Material Description General fill

Maximum Dry Density (t/m³): 2.09 Optimum Moisture Content (%): 10.5 Field Moisture Content (%): 8.9 Sample Percent Oversize (%): 0.0 Oversize Included / Excluded Excluded Target Density Ratio (%): 95 Target Moisture Ratio (%): 100 Placement Dry Density (t/m³): 1.98 Placement Dry Density Ratio (%): 95.0 Placement Moisture Content (%): 10.3 Placement Moisture Ratio (%): 100.0 Test Condition / Soaking Period: Soaked / 4 Days CBR Surcharge (kg) 4.5 Dry Density After Soak (t/m³): 1.98 Total Curing Time (hrs) 4 Liquid Limit Method Estimation Moisture (top 30mm) After Soak (%): 11.4 Moisture (remainder) After Soak (%): 12.8 CBR Swell (%): 0.0 Minimum CBR Specification (%): - CBR Value @ 2.5mm (%): 30		CBR PENETRATION PLOT 
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Remarks

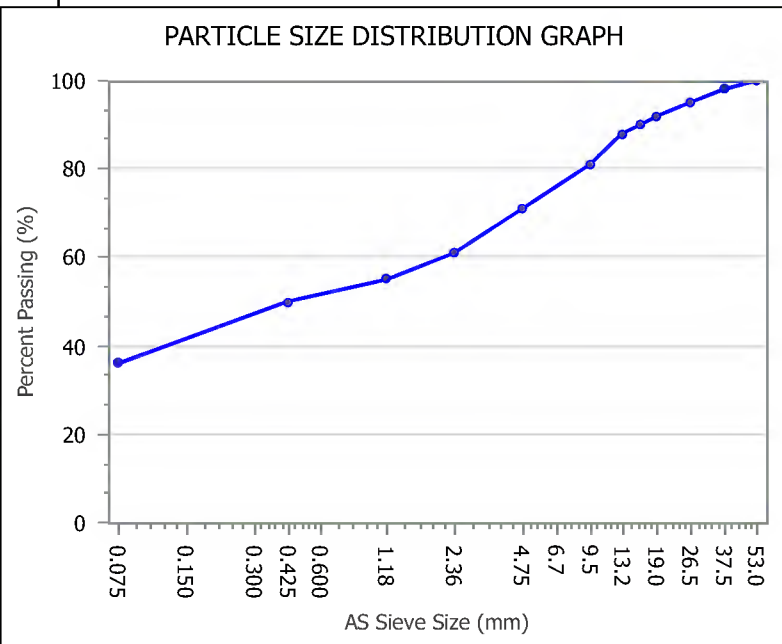
	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3	

QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73098-1 Project Number: 21791/P/1241 Lot Number: Trench LY1 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 6/09/2024 Page 1 of 1
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/168064 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 30/08/2024 Sampled By Liam Welsh Date Tested 2/09/2024 Drying Methods PSD: / ATT:Air Dried Atterberg Preparation Dry Sieved	Location 47.0m Backfill Nth to Sth Material Source Existing Material Type General Fill Material Description -

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
53.0		100	
37.5		98	
26.5		95	
19.0		92	
16.0		90	
13.2		88	
9.5		81	
4.75		71	
2.36		61	
1.18		55	
0.425		50	
0.075		36	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		27		0.075/0.425 Fines Ratio		0.72	
Plastic Limit (%)		17		PI x 0.425 Ratio (%)		501.0	
Plastic Index (%)		10		LS x 0.425 Ratio (%)		300.6	
Linear Shrinkage (%)		6.0		Particle Size Dist. Moisture Content (%)		11.6	
Shrinkage Observations	N/A						

Remarks

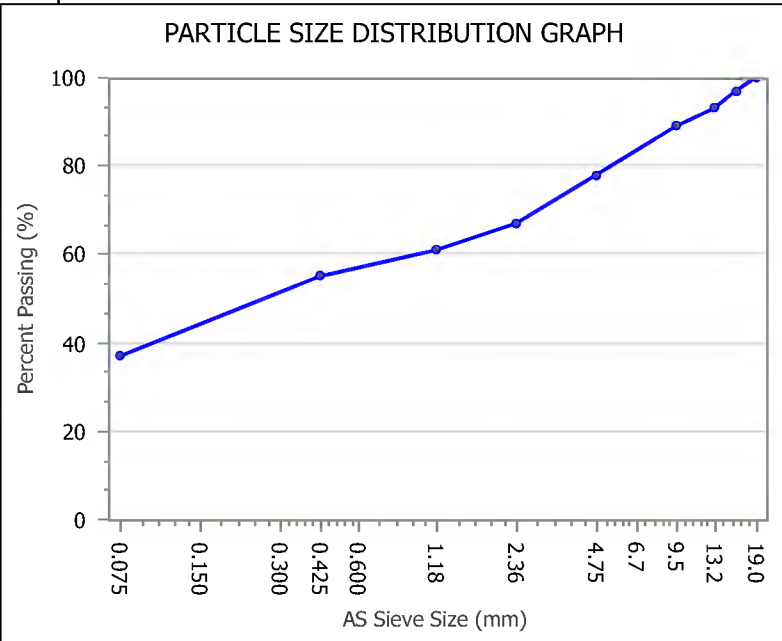
	Accredited for compliance with ISO/IEC 17025 – Testing	
NATA	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W85MCRP Rev 2

QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73099-1 Project Number: 21791/P/1241 Lot Number: Trench LY4 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 6/09/2024 Page 1 of 1
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/168073 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 30/08/2024 Sampled By Liam Welsh Date Tested 2/09/2024 Drying Methods PSD: / ATT:Air Dried Atterberg Preparation Dry Sieved	Location 42.0m Backfill Nth to Sth Material Source Existing Material Type General Fill Material Description General Fill

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
19.0		100	
16.0		97	
13.2		93	
9.5		89	
4.75		78	
2.36		67	
1.18		61	
0.425		55	
0.075		37	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		27		0.075/0.425 Fines Ratio		0.68	
Plastic Limit (%)		17		PI x 0.425 Ratio (%)		549.0	
Plastic Index (%)		10		LS x 0.425 Ratio (%)		329.4	
Linear Shrinkage (%)		6.0		Particle Size Dist. Moisture Content (%)		11.4	
Shrinkage Observations	N/A						

Remarks

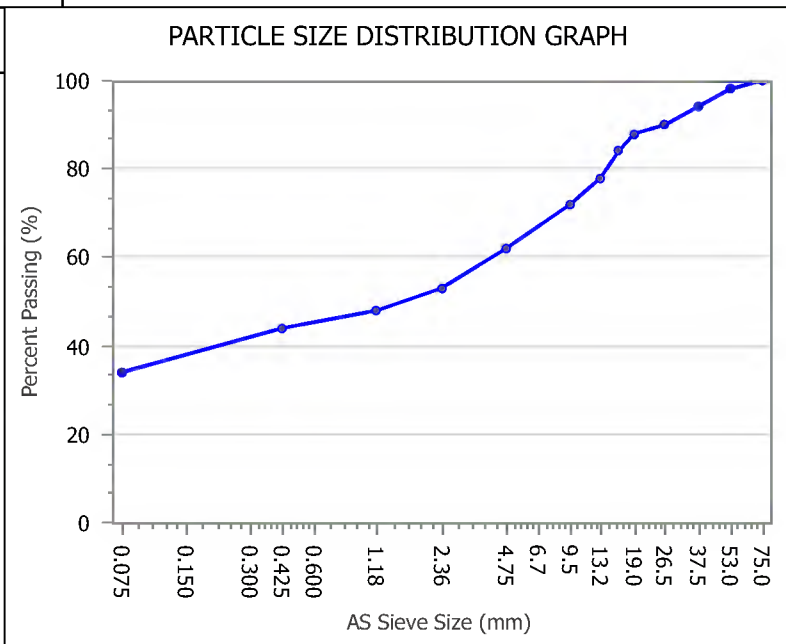
	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W85MCRP Rev 2

QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73100-1 Project Number: 21791/P/1241 Lot Number: Lot 519 - 523 LY 2 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 6/09/2024 Page 1 of 1
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/168102 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 30/08/2024 Sampled By Liam Welsh Date Tested 2/09/2024 Drying Methods PSD / ATT: Air Dried Atterberg Preparation Dry Sieved	E: 14448.649 N: 21067.207 RL: (m) 20.905 Material Source Imported Fill Material Type General Fill Material Description General Fill

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
75.0		100	
53.0		98	
37.5		94	
26.5		90	
19.0		88	
16.0		84	
13.2		78	
9.5		72	
4.75		62	
2.36		53	
1.18		48	
0.425		44	
0.075		34	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		33		0.075/0.425 Fines Ratio		0.78	
Plastic Limit (%)		21		PI x 0.425 Ratio (%)		526.6	
Plastic Index (%)		12		LS x 0.425 Ratio (%)		219.4	
Linear Shrinkage (%)		5.0		Particle Size Dist. Moisture Content (%)		13.5	
Shrinkage Observations	N/A						

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
NATA	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W85MCRP Rev 2



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73101-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 519 - 523 LY 2
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 6/09/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168101	21791/S/168102	21791/S/168103	
ID / Client ID	-	-	-	
Lot Number	Lot 519 - 523 LY 2	Lot 519 - 523 LY 2	Lot 519 - 523 LY 2	
Date / Time Tested	30/08/2024	30/08/2024	30/08/2024	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14474.324	14448.649	14416.203	
N:	21078.778	21067.207	21054.904	
RL: (m)	21.092	20.905	20.630	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	5 / 6	11 / 12	12 / 13	
MDR Sample Number	21791/S/168101	21791/S/168102	21791/S/168103	
MDR Sample Date / Update	30/08/2024	30/08/2024	30/08/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	10.5	12.3	11.8	
Optimum Moisture Content (%)	9.0	9.5	9.0	
Variation from OMC (%)	1.5% Wetter than OMC	3.0% Wetter than OMC	3.0% Wetter than OMC	
Moisture Ratio (%)	114.0	131.0	132.5	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.28	2.26	2.26	
Field Dry Density (t/m ³)	2.07	2.01	2.02	
Maximum Dry Density (t/m ³)	2.10	2.05	2.06	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	98.5	98.0	98.0	

Remarks

<div style="text-align: center;">Accredited for compliance with ISO/IEC 17025 – Testing</div>  <p>Accreditation Number: 1986 Corporate Site Number: 21791</p>	 <p>Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3</p>
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LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

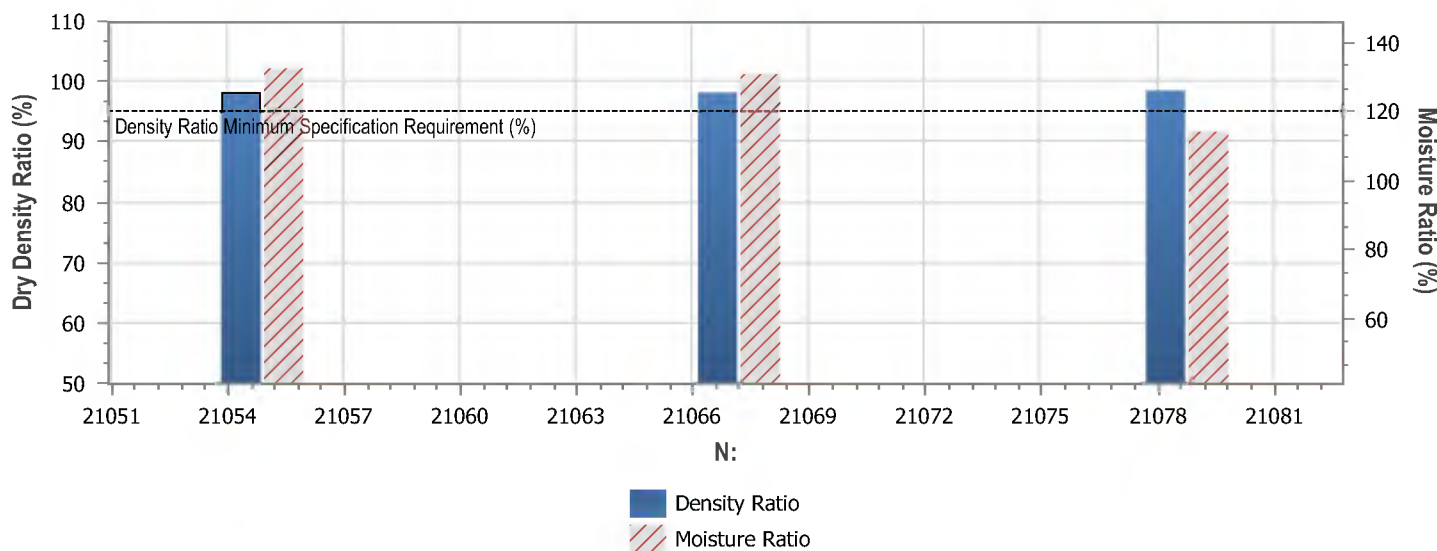
Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73101-1 Project Number: 21791/P/1241 Lot Number: Lot 519 - 523 LY 2 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 6/09/2024 Page 2 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number Calibration Last Updated Nominated Calibration Layer Depth (mm)	- - -	Material Source Material Type	- -
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LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	114.1	132.6	125.9	10.226
Dry Density Ratio (%)	98.1	98.4	98.2	0.153

Lot Number:	Lot 519 - 523 LY 2
Mean Moisture Ratio (%):	125.9
Mean Density Ratio (%):	98.2

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73145-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 520 - 523 L.Side LY 1
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 7/09/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/167982	21791/S/167983	21791/S/167984	
ID / Client ID	-	-	-	
Lot Number	Lot 520 - 523 L.Side LY 1	Lot 520 - 523 L.Side LY 1	Lot 520 - 523 L.Side LY 1	
Date / Time Tested	29/08/2024 09:15	29/08/2024 09:25	29/08/2024 09:35	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14426.056	14407.449	14433.894	
N:	21070.345	21071.348	21072.241	
RL: (m)	20.519	20.336	20.534	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	5 / 6	2 / 2	7 / 8	
MDR Sample Number	21791/S/167982	21791/S/167983	21791/S/167984	
MDR Sample Date / Update	29/08/2024	29/08/2024	29/08/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	10.1	11.0	10.6	
Optimum Moisture Content (%)	8.5	9.0	9.0	
Variation from OMC (%)	1.5% Wetter than OMC	2.0% Wetter than OMC	1.5% Wetter than OMC	
Moisture Ratio (%)	116.0	123.5	118.0	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.28	2.33	2.32	
Field Dry Density (t/m ³)	2.07	2.10	2.10	
Maximum Dry Density (t/m ³)	2.10	2.12	2.13	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	98.5	99.0	98.0	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

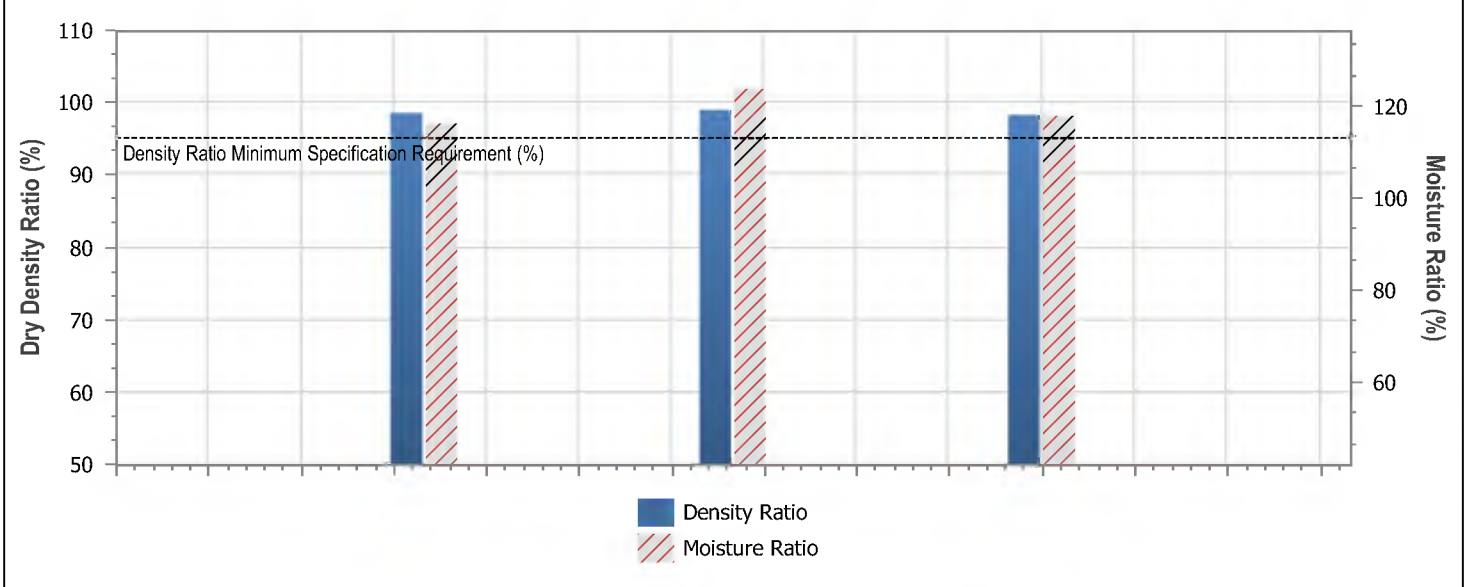
Client: BMD Urban Pty Ltd	Report Number: 21791/R/73145-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 520 - 523 L.Side LY 1
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 7/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	116.1	123.6	119.2	3.932
Dry Density Ratio (%)	98.2	98.9	98.5	0.351

Lot Number:	Lot 520 - 523 L.Side LY 1
Mean Moisture Ratio (%):	119.2
Mean Density Ratio (%):	98.5

Remarks

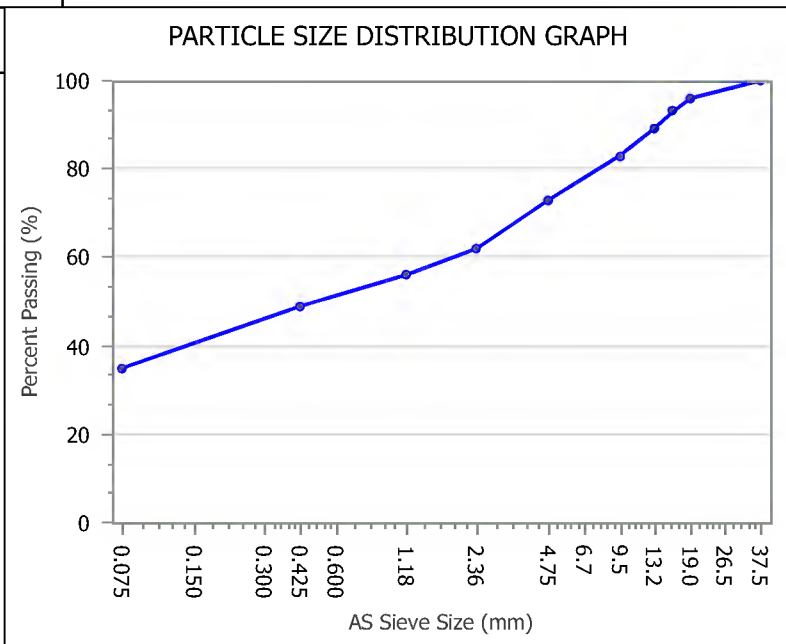
 <p style="text-align: center;">Accredited for compliance with ISO/IEC 17025 – Testing</p> <p>Accreditation Number: 1986 Corporate Site Number: 21791</p>	 Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
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QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73146-1 Project Number: 21791/P/1241 Lot Number: Trench Foundation Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 7/09/2024 Page 1 of 1
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/168061 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 30/08/2024 Sampled By Liam Welsh Date Tested 2/09/2024 Drying Methods PSD / ATT: Air Dried Atterberg Preparation Dry Sieved	Location 66.0m Trench Base Nth to Sth Material Source Existing Material Type Subgrade Material Description Subgrade

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
37.5		100	
19.0		96	
16.0		93	
13.2		89	
9.5		83	
4.75		73	
2.36		62	
1.18		56	
0.425		49	
0.075		35	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		27		0.075/0.425 Fines Ratio		0.71	
Plastic Limit (%)		18		PI x 0.425 Ratio (%)		443.5	
Plastic Index (%)		9		LS x 0.425 Ratio (%)		295.7	
Linear Shrinkage (%)		6.0		Particle Size Dist. Moisture Content (%)		11.2	
Shrinkage Observations	N/A						

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
NATA	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W85MCRP Rev 2



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73147-1
Client Address: PO BOX 197, Wynnun	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY2
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 7/09/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168066	21791/S/168067	21791/S/168068
ID / Client ID	-	-	-
Lot Number	Trench LY2	Trench LY2	Trench LY2
Date / Time Tested	30/08/2024	30/08/2024	30/08/2024
Material Source	Existing	Existing	Existing
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 / 150 / 200	175 / 150 / 200	175 / 150 / 200
Standard or Modified	Modified	Modified	Modified
Stabilised Material Curing Time	-	-	-
Location	14.0m	72.0m	93.0m
	Backfill	Backfill	Backfill
	Nth to Sth	Nth to Sth	Nth to Sth
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet / Dry (%)	0 / 0	0 / 0	0 / 0
MDR Sample Number	21791/S/168066	21791/S/168067	21791/S/168068
MDR Sample Date / Update	30/08/2024	30/08/2024	30/08/2024
Assigned MDR (Yes / No)	No	No	No
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	11.8	11.7	11.1
Optimum Moisture Content (%)	9.5	9.5	9.0
Variation from OMC (%)	2.0% Wetter than OMC	2.0% Wetter than OMC	2.5% Wetter than OMC
Moisture Ratio (%)	123.0	123.0	126.0
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.30	2.31	2.30
Field Dry Density (t/m ³)	2.05	2.07	2.07
Maximum Dry Density (t/m ³)	2.07	2.09	2.11
Dry Density Ratio Required (%)	95	95	95
Dry Density Ratio (%)	99.0	99.0	98.0

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

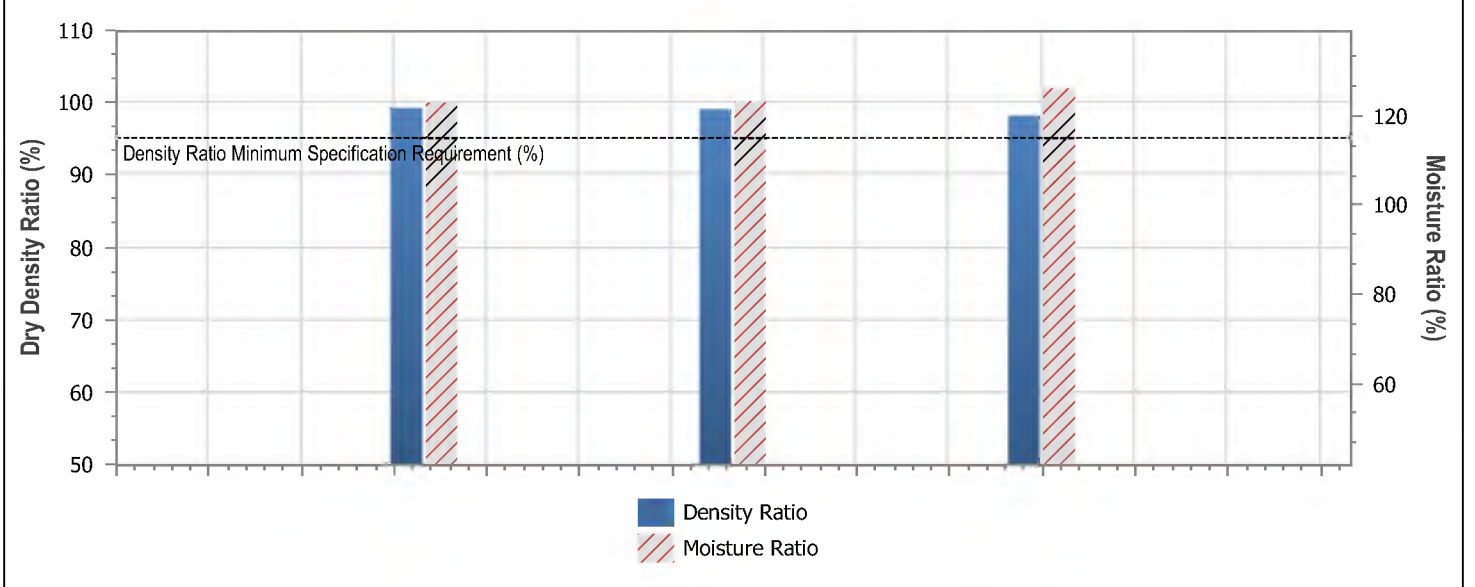
Client: BMD Urban Pty Ltd	Report Number: 21791/R/73147-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY2
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 7/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	122.9	126.1	124.1	1.767
Dry Density Ratio (%)	98.1	99.2	98.8	0.586

Lot Number:	Trench LY2
Mean Moisture Ratio (%):	124.1
Mean Density Ratio (%):	98.8

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73148-1 Project Number: 21791/P/1241 Lot Number: Trench LY4 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 7/09/2024 Page 1 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168072	21791/S/168073	21791/S/168074
ID / Client ID	-	-	-
Lot Number	Trench LY4	Trench LY4	Trench LY4
Date / Time Tested	30/08/2024	30/08/2024	30/08/2024
Material Source	Existing	Existing	Existing
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 / 150 / 200	175 / 150 / 200	175 / 150 / 200
Standard or Modified	Modified	Modified	Modified
Stabilised Material Curing Time	-	-	-
Location	27.0m Backfill Nth to Sth	42.0m Backfill Nth to Sth	88.0m Backfill Nth to Sth
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet / Dry (%)	0 / 0	0 / 0	0 / 0
MDR Sample Number	21791/S/168072	21791/S/168073	21791/S/168074
MDR Sample Date / Update	30/08/2024	30/08/2024	30/08/2024
Assigned MDR (Yes / No)	No	No	No
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	12.1	11.4	11.8
Optimum Moisture Content (%)	10.0	9.0	9.5
Variation from OMC (%)	2.0% Wetter than OMC	2.0% Wetter than OMC	2.0% Wetter than OMC
Moisture Ratio (%)	121.0	124.0	121.5
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.30	2.31	2.32
Field Dry Density (t/m ³)	2.06	2.08	2.07
Maximum Dry Density (t/m ³)	2.06	2.10	2.10
Dry Density Ratio Required (%)	95	95	95
Dry Density Ratio (%)	99.5	98.5	98.5

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

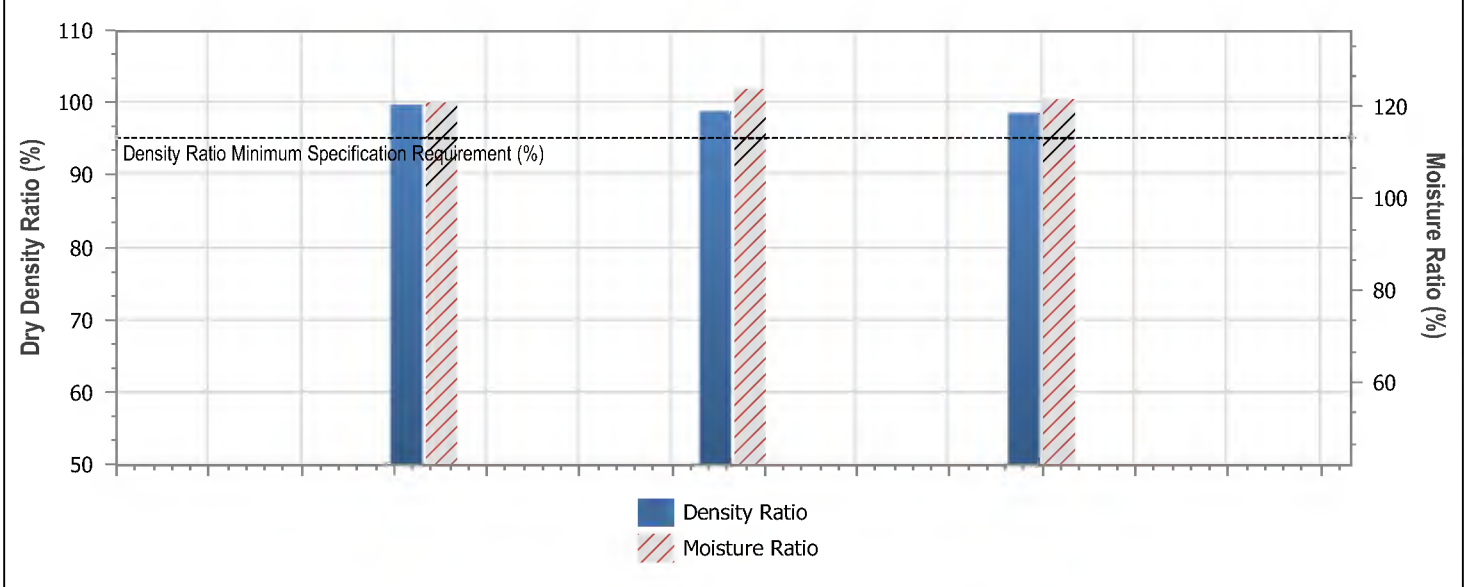
Client: BMD Urban Pty Ltd	Report Number: 21791/R/73148-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY4
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 7/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	121.0	123.9	122.2	1.531
Dry Density Ratio (%)	98.5	99.6	98.9	0.586

Lot Number:	Trench LY4
Mean Moisture Ratio (%):	122.2
Mean Density Ratio (%):	98.9

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73243-1
Client Address: PO BOX 197, Wynnun	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY 5
Location: Darwin	Internal Test Request: 21791/T/30582
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 12/09/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168152	21791/S/168153	21791/S/168154
ID / Client ID	-	-	-
Lot Number	Trench LY 5	Trench LY 5	Trench LY 5
Date / Time Tested	2/09/2024 10:30	2/09/2024 10:45	2/09/2024 11:00
Material Source	Existing	Existing	Existing
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	Modified	Modified	Modified
Stabilised Material Curing Time	-	-	-
Location	87.0m Backfill Nth to Sth	56.0m Backfill Nth to Sth	19.0m Backfill Nth to Sth
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet / Dry (%)	2 / 2	0 / 0	0 / 0
MDR Sample Number	21791/S/168152	21791/S/168153	21791/S/168154
MDR Sample Date / Update	2/09/2024	2/09/2024	2/09/2024
Assigned MDR (Yes / No)	No	No	No
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	9.2	11.7	8.1
Optimum Moisture Content (%)	9.0	10.5	9.5
Variation from OMC (%)	0.5% Wetter than OMC	1.5% Wetter than OMC	1.5% Drier than OMC
Moisture Ratio (%)	103.5	113.5	86.0
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.22	2.17	2.21
Field Dry Density (t/m ³)	2.04	1.94	2.04
Maximum Dry Density (t/m ³)	2.12	2.06	2.08
Dry Density Ratio Required (%)	95	95	95
Dry Density Ratio (%)	96.0	94.0	98.0

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

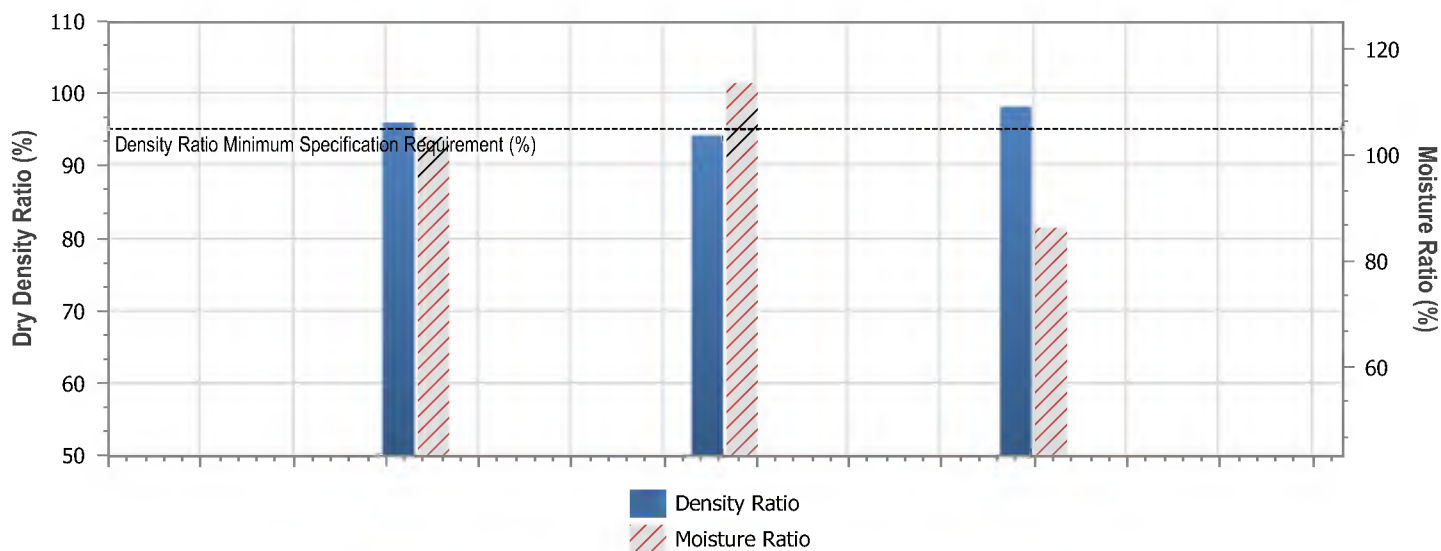
Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73243-1 Project Number: 21791/P/1241 Lot Number: Trench LY 5 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 12/09/2024 Page 2 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	86.2	113.6	101.1	13.848
Dry Density Ratio (%)	94.1	98.1	96.0	2.003

Lot Number:	Trench LY 5
Mean Moisture Ratio (%):	101.1
Mean Density Ratio (%):	96.0

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Sunil Sukhdeo Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73244-1
Client Address: PO BOX 197, Wynnnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY 6
Location: Darwin	Internal Test Request: 21791/T/30582
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 12/09/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168155	21791/S/168156	21791/S/168157
ID / Client ID	-	-	-
Lot Number	Trench LY 6	Trench LY 6	Trench LY 6
Date / Time Tested	2/09/2024 11:20	2/09/2024 11:35	2/09/2024 12:10
Material Source	Existing	Existing	Existing
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	Modified	Modified	Modified
Stabilised Material Curing Time	-	-	-
Location	81.0m Backfill Nth to Sth	49.0m Backfill Nth to Sth	22.0m Backfill Nth to Sth
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet / Dry (%)	4 / 4	0 / 0	0 / 0
MDR Sample Number	21791/S/168155	21791/S/168156	21791/S/168157
MDR Sample Date / Update	2/09/2024	2/09/2024	2/09/2024
Assigned MDR (Yes / No)	No	No	No
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	10.3	11.5	10.8
Optimum Moisture Content (%)	9.0	10.5	10.0
Variation from OMC (%)	1.0% Wetter than OMC	1.0% Wetter than OMC	0.5% Wetter than OMC
Moisture Ratio (%)	112.0	108.5	107.0
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.35	2.34	2.22
Field Dry Density (t/m ³)	2.13	2.10	2.00
Maximum Dry Density (t/m ³)	2.14	2.10	2.08
Dry Density Ratio Required (%)	95	95	95
Dry Density Ratio (%)	99.5	100.0	96.0

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

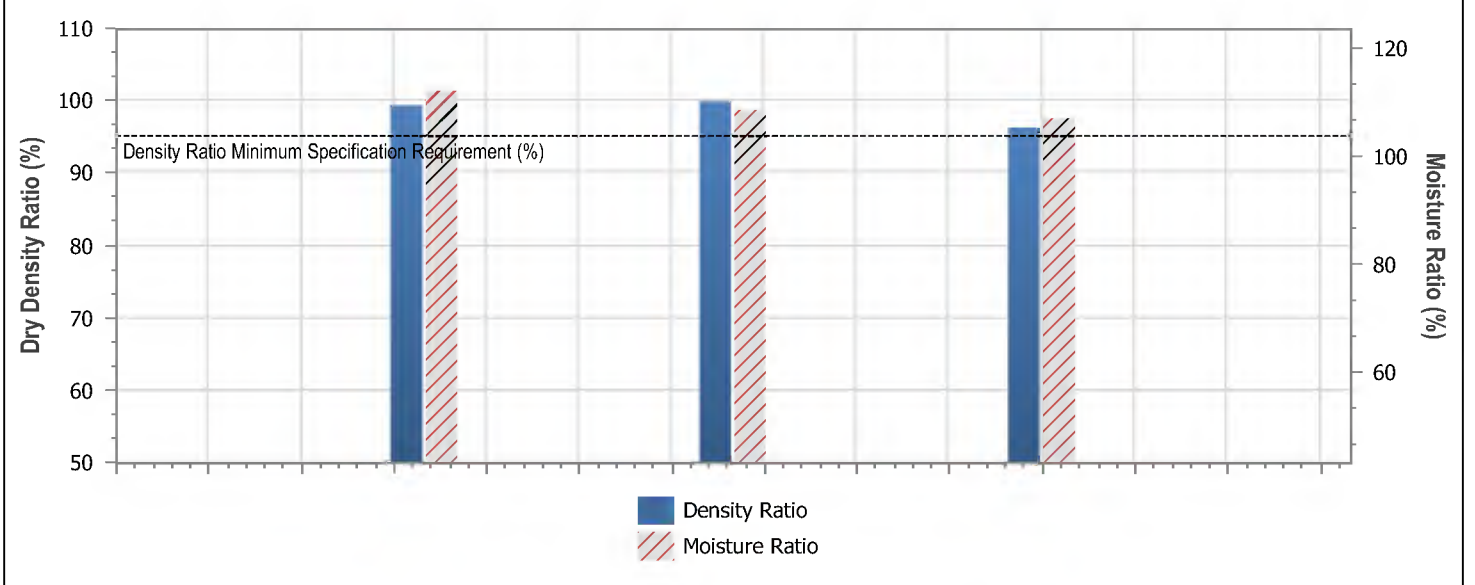
Client: BMD Urban Pty Ltd	Report Number: 21791/R/73244-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY 6
Location: Darwin	Internal Test Request: 21791/T/30582
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 12/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	106.9	112.0	109.1	2.608
Dry Density Ratio (%)	96.2	99.8	98.4	1.950

Lot Number:	Trench LY 6
Mean Moisture Ratio (%):	109.1
Mean Density Ratio (%):	98.4

Remarks

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Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Sunil Sukhdeo Form ID: W27ASRepSum Rev 3



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnun Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73393-1 Project Number: 21791/P/1241 Lot Number: Lot 519 - 523 LY 2 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 19/09/2024 Page 1 of 1
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168101	21791/S/168102	21791/S/168103	
ID / Client ID	-	-	-	
Lot Number	Lot 519 - 523 LY 2	Lot 519 - 523 LY 2	Lot 519 - 523 LY 2	
Date / Time Tested	30/08/2024	30/08/2024	30/08/2024	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14474.324	14448.649	14416.203	
N:	21078.778	21067.207	21054.904	
RL: (m)	21.092	20.905	20.630	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	5 / 6	11 / 12	12 / 13	
MDR Sample Number	21791/S/168101	21791/S/168102	21791/S/168103	
MDR Sample Date / Update	30/08/2024	30/08/2024	30/08/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	10.5	12.3	11.8	
Optimum Moisture Content (%)	9.0	9.5	9.0	
Variation from OMC (%)	1.5% Wetter than OMC	3.0% Wetter than OMC	3.0% Wetter than OMC	
Moisture Ratio (%)	114.0	131.0	132.5	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.28	2.26	2.26	
Field Dry Density (t/m ³)	2.07	2.01	2.02	
Maximum Dry Density (t/m ³)	2.10	2.05	2.06	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	98.5	98.0	98.0	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRep Rev 1
Accreditation Number: 1986 Corporate Site Number: 21791	



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73396-1
Client Address: PO BOX 197, Wynnun	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 515 - 517 - LY1
Location: Darwin	Internal Test Request: 21791/T/30582
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 19/09/2024 Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168169	21791/S/168170	21791/S/168171	
ID / Client ID	-	-	-	
Lot Number	Lot 515 - 517 - LY1	Lot 515 - 517 - LY1	Lot 515 - 517 - LY1	
Date / Time Tested	2/09/2024 12:30	2/09/2024 12:50	2/09/2024 13:20	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14422.557	14408.735	14394.108	
N:	21103.660	21104.619	21083.086	
RL: (m)	20.536	20.555	20.323	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	15 / 16	10 / 11	19 / 20	
MDR Sample Number	21791/S/168169	21791/S/168170	21791/S/168171	
MDR Sample Date / Update	2/09/2024	2/09/2024	2/09/2024	
Assigned MDR (Yes / No)	No	No	No	
Moisture Test Results:				
Field Moisture Content (%)	11.9	11.4	10.6	
Optimum Moisture Content (%)	9.0	8.0	9.0	
Variation from OMC (%)	3.0% Wetter than OMC	3.0% Wetter than OMC	2.0% Wetter than OMC	
Moisture Ratio (%)	131.0	139.0	120.5	
Density Test Results:				
Field Wet Density (t/m ³)	2.26	2.31	2.27	
Field Dry Density (t/m ³)	2.02	2.08	2.06	
Maximum Dry Density (t/m ³)	2.03	2.07	2.06	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	99.5	100.0	99.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRep Rev 1
Accreditation Number: 1986 Corporate Site Number: 21791	



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73397-1
Client Address: PO BOX 197, Wynnun	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 519 - 523- LY3
Location: Darwin	Internal Test Request: 21791/T/30582
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 19/09/2024 Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168299	21791/S/168300	21791/S/168301	
ID / Client ID	-	-	-	
Lot Number	Lot 519 - 523- LY3	Lot 519 - 523- LY3	Lot 519 - 523- LY3	
Date / Time Tested	3/09/2024 08:00	3/09/2024 08:15	3/09/2024 08:40	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14469.799	14452.178	14419.614	
N:	21072.261	21061.039	21052.426	
RL: (m)	21.124	21.068	20.844	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	11 / 0	15 / 0	12 / 0	
MDR Sample Number	21791/S/168299	21791/S/168300	21791/S/168301	
MDR Sample Date / Update	3/09/2024	3/09/2024	3/09/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	13.1	12.7	13.5	
Optimum Moisture Content (%)	12.5	12.0	13.0	
Variation from OMC (%)	1.0% Wetter than OMC	1.0% Wetter than OMC	0.5% Wetter than OMC	
Moisture Ratio (%)	106.5	106.5	105.5	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.29	2.28	2.30	
Field Dry Density (t/m ³)	2.02	2.02	2.03	
Maximum Dry Density (t/m ³)	2.00	2.01	2.00	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	101.5	100.5	101.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRep Rev 1
Accreditation Number: 1986 Corporate Site Number: 21791	



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73398-1
Client Address: PO BOX 197, Wynnun	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 532 - 536- LY1
Location: Darwin	Internal Test Request: 21791/T/30582
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 19/09/2024 Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168302	21791/S/168303	21791/S/168304	
ID / Client ID	-	-	-	
Lot Number	Lot 532 - 536- LY1	Lot 532 - 536- LY1	Lot 532 - 536- LY1	
Date / Time Tested	3/09/2024 09:15	3/09/2024 09:35	3/09/2024 09:55	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14491.132	14491.155	14504.923	
N:	21016.364	21016.372	21013.011	
RL: (m)	20.818	20.809	20.714	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	6 / 7	10 / 11	5 / 5	
MDR Sample Number	21791/S/168302	21791/S/168303	21791/S/168304	
MDR Sample Date / Update	3/09/2024	3/09/2024	3/09/2024	
Assigned MDR (Yes / No)	No	No	No	
Moisture Test Results:				
Field Moisture Content (%)	11.9	12.6	12.7	
Optimum Moisture Content (%)	10.5	12.0	12.5	
Variation from OMC (%)	1.0% Wetter than OMC	0.5% Wetter than OMC	0.0% Wetter than OMC	
Moisture Ratio (%)	111.0	106.0	101.0	
Density Test Results:				
Field Wet Density (t/m ³)	2.30	2.27	2.29	
Field Dry Density (t/m ³)	2.06	2.01	2.03	
Maximum Dry Density (t/m ³)	2.04	2.01	2.00	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	101.0	100.0	101.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRep Rev 1
Accreditation Number: 1986 Corporate Site Number: 21791	



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnun Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73400-1 Project Number: 21791/P/1241 Lot Number: Lot 515 - 518 - LY2 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 19/09/2024 Page 1 of 1
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168345	21791/S/168346	21791/S/168347	
ID / Client ID	-	-	-	
Lot Number	Lot 515 - 518 - LY2	Lot 515 - 518 - LY2	Lot 515 - 518 - LY2	
Date / Time Tested	5/09/2024 09:40	5/09/2024 09:55	5/09/2024 10:05	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14445.467	14429.734	14414.272	
N:	21093.729	21083.247	21072.897	
RL: (m)	21.114	21.060	20.879	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	13 / 14	5 / 6	13 / 14	
MDR Sample Number	21791/S/168345	21791/S/168346	21791/S/168347	
MDR Sample Date / Update	5/09/2024	5/09/2024	5/09/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	11.5	10.5	10.1	
Optimum Moisture Content (%)	10.5	12.0	11.0	
Variation from OMC (%)	1.0% Wetter than OMC	1.5% Drier than OMC	0.5% Drier than OMC	
Moisture Ratio (%)	110.5	87.0	93.5	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.29	2.33	2.32	
Field Dry Density (t/m ³)	2.06	2.10	2.10	
Maximum Dry Density (t/m ³)	2.06	2.04	2.07	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	99.5	103.0	102.0	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRep Rev 1
Accreditation Number: 1986 Corporate Site Number: 21791	



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73401-1
Client Address: PO BOX 197, Wynnun	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 524 - 528 - LY2
Location: Darwin	Internal Test Request: 21791/T/30582
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 19/09/2024 Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168348	21791/S/168349	21791/S/168350	
ID / Client ID	-	-	-	
Lot Number	Lot 524 - 528 - LY2	Lot 524 - 528 - LY2	Lot 524 - 528 - LY2	
Date / Time Tested	5/09/2024 12:50	5/09/2024 13:10	5/09/2024 13:20	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14512.100	14487.902	14470.671	
N:	21034.100	21016.516	21,001.242	
RL: (m)	21.246	21.025	21.103	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	13 / 14	10 / 11	10 / 11	
MDR Sample Number	21791/S/168348	21791/S/168349	21791/S/168350	
MDR Sample Date / Update	5/09/2024	5/09/2024	5/09/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	10.5	11.4	11.4	
Optimum Moisture Content (%)	10.0	11.0	10.5	
Variation from OMC (%)	0.5% Wetter than OMC	0.5% Wetter than OMC	1.0% Wetter than OMC	
Moisture Ratio (%)	107.0	105.5	109.5	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.32	2.30	2.29	
Field Dry Density (t/m ³)	2.10	2.06	2.06	
Maximum Dry Density (t/m ³)	2.10	2.06	2.08	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	100.0	100.0	99.0	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRep Rev 1
Accreditation Number: 1986 Corporate Site Number: 21791	



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73402-1
Client Address: PO BOX 197, Wynnun	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 512 - 514 LY1
Location: Darwin	Internal Test Request: 21791/T/30582
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 19/09/2024 Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168421	21791/S/168422	21791/S/168423	
ID / Client ID	-	-	-	
Lot Number	Lot 512 - 514 LY1	Lot 512 - 514 LY1	Lot 512 - 514 LY1	
Date / Time Tested	6/09/2024 10:50	6/09/2024 11:05	6/09/2024 11:20	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14411.303	14395.337	14411.577	
N:	21130.045	21117.482	21108.326	
RL: (m)	20.819	20.676	20.843	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	4 / 4	4 / 4	6 / 7	
MDR Sample Number	21791/S/168421	21791/S/168422	21791/S/168423	
MDR Sample Date / Update	6/09/2024	6/09/2024	6/09/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	9.7	10.5	9.4	
Optimum Moisture Content (%)	9.5	9.0	9.0	
Variation from OMC (%)	0.0% Wetter than OMC	1.5% Wetter than OMC	0.5% Wetter than OMC	
Moisture Ratio (%)	101.0	114.0	103.5	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.18	2.30	2.32	
Field Dry Density (t/m ³)	1.99	2.08	2.12	
Maximum Dry Density (t/m ³)	2.11	2.15	2.13	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	94.5	96.5	99.5	

Remarks

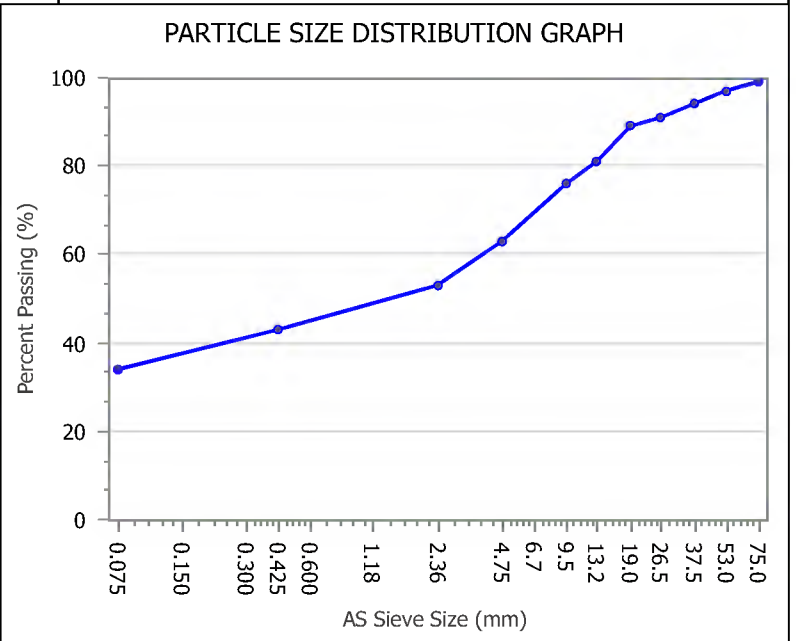
Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRep Rev 1
Accreditation Number: 1986 Corporate Site Number: 21791	

QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73404-1 Project Number: 21791/P/1241 Lot Number: Lot 515 - 517 - LY1 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 19/09/2024 Page 1 of 4
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/168170 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 2/09/2024 Sampled By Dilush Anthonige Date Tested 7/09/2024 Drying Methods PSD / ATT: Air Dried Atterberg Preparation Dry Sieved	E: 14408.735 N: 21104.619 RL: (m) 20.555 Material Source Imported Fill Material Type General Fill Material Description General fill

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
75.0		99	100
53.0		97	
37.5		94	
26.5		91	
19.0		89	
13.2		81	
9.5		76	
4.75		63	
2.36		53	
0.425		43	
0.075		34	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		34		0.075/0.425 Fines Ratio		0.80	
Plastic Limit (%)		22		PI x 0.425 Ratio (%)		513.6	
Plastic Index (%)	2	12	15	LS x 0.425 Ratio (%)		256.8	
Linear Shrinkage (%)		6.0		Particle Size Dist. Moisture Content (%)		12.0	
Shrinkage Observations	N/A						

Remarks

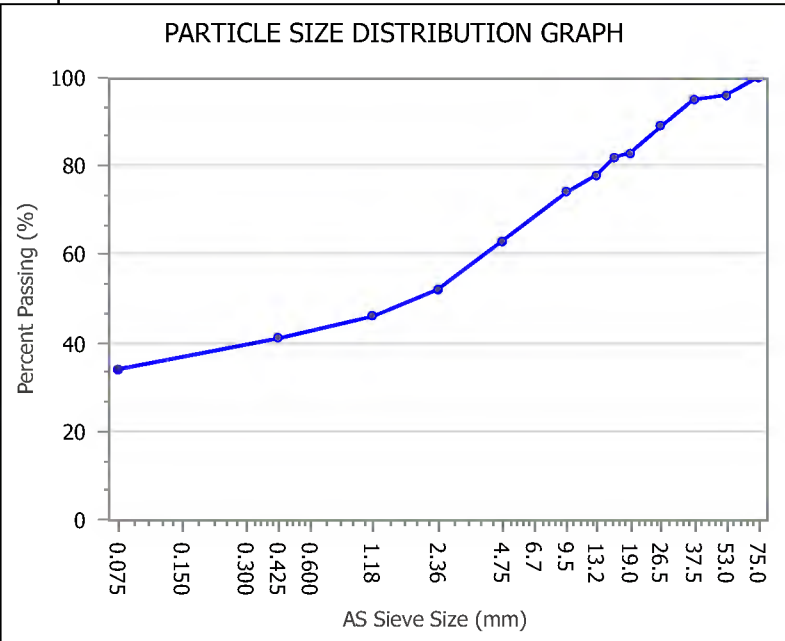
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Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Sunil Sukhdeo Form ID: W85MCRep Rev 2

QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73404-1 Project Number: 21791/P/1241 Lot Number: Lot 519 - 523- LY3 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 19/09/2024 Page 2 of 4
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/168300 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 3/09/2024 Sampled By Dilush Anthonige Date Tested 10/09/2024 Drying Methods PSD: / ATT:Air Dried Atterberg Preparation Dry Sieved	E: 14452.178 N: 21061.039 RL: (m) 21.068 Material Source Imported Fill Material Type General Fill Material Description General Fill

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
75.0		100	100
53.0		96	
37.5		95	
26.5		89	
19.0		83	
16.0		82	
13.2		78	
9.5		74	
4.75		63	
2.36		52	
1.18		46	
0.425		41	
0.075		34	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		35		0.075/0.425 Fines Ratio		0.82	
Plastic Limit (%)		23		PI x 0.425 Ratio (%)		495.7	
Plastic Index (%)	2	12	15	LS x 0.425 Ratio (%)		227.2	
Linear Shrinkage (%)		5.5		Particle Size Dist. Moisture Content (%)		12.7	
Shrinkage Observations	N/A						

Remarks

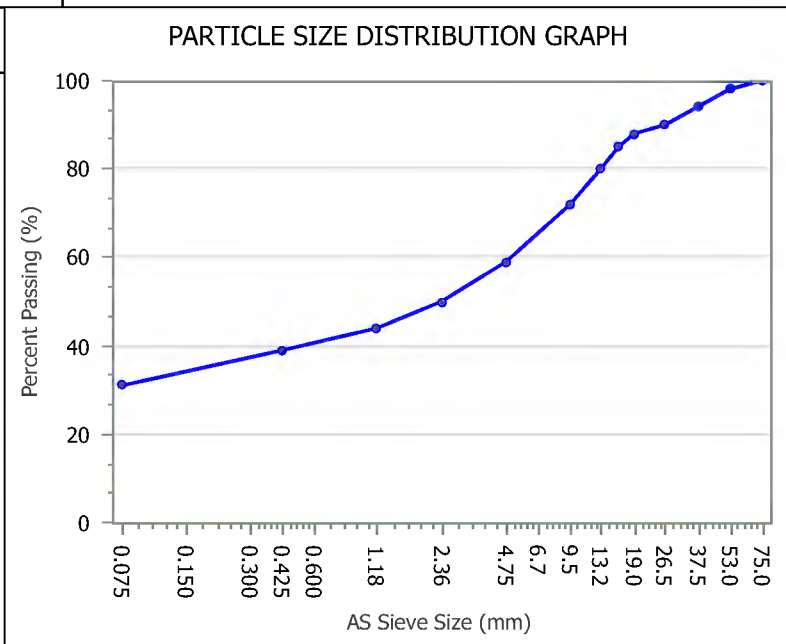
	Accredited for compliance with ISO/IEC 17025 – Testing	
NATA	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Sunil Sukhdeo Form ID: W85MCRep Rev 2

QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73404-1 Project Number: 21791/P/1241 Lot Number: Lot 532 - 536- LY1 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 19/09/2024 Page 3 of 4
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/168303 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 3/09/2024 Sampled By Dilush Anthonige Date Tested 10/09/2024 Drying Methods PSD / ATT:Air Dried Atterberg Preparation Dry Sieved	E: 14491.155 N: 21016.372 RL: (m) 20.809 Material Source Imported Fill Material Type General Fill Material Description General Fill

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
75.0		100	100
53.0		98	
37.5		94	
26.5		90	
19.0		88	
16.0		85	
13.2		80	
9.5		72	
4.75		59	
2.36		50	
1.18		44	
0.425		39	
0.075		31	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		30		0.075/0.425 Fines Ratio		0.79	
Plastic Limit (%)		20		PI x 0.425 Ratio (%)		393.2	
Plastic Index (%)	2	10	15	LS x 0.425 Ratio (%)		176.9	
Linear Shrinkage (%)		4.5		Particle Size Dist. Moisture Content (%)		13.9	
Shrinkage Observations	N/A						

Remarks

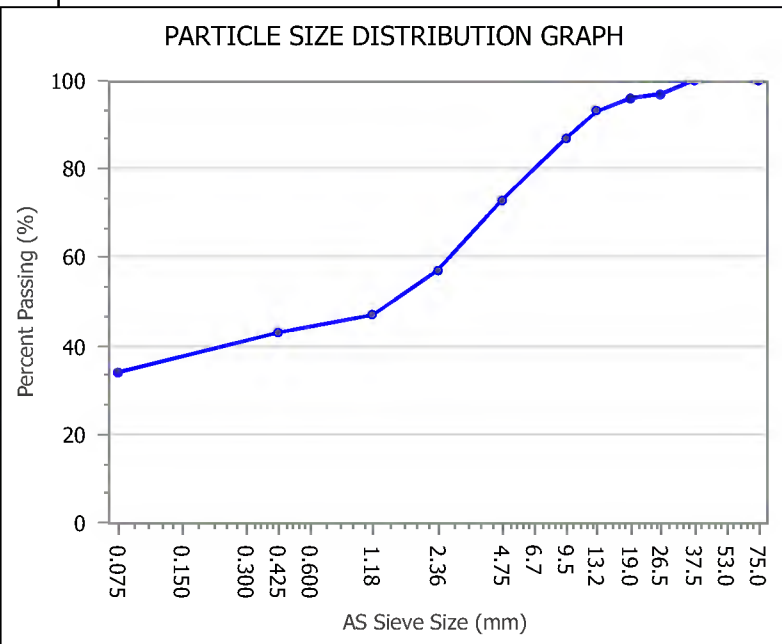
	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Sunil Sukhdeo Form ID: W85MCRep Rev 2

QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73404-1 Project Number: 21791/P/1241 Lot Number: Lot 512 - 514 LY1 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 19/09/2024 Page 4 of 4
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/168422 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 6/09/2024 Sampled By Dilush Anthonige Date Tested 18/09/2024 Drying Methods PSD / ATT: Air Dried Atterberg Preparation Dry Sieved	E: 14395.337 N: 21117.482 RL: (m) 20.676 Material Source Imported Fill Material Type General Fill Material Description General Fill



AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
75.0		100	100
37.5		100	
26.5		97	
19.0		96	
13.2		93	
9.5		87	
4.75		73	
2.36		57	
1.18		47	
0.425		43	
0.075		34	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		37		0.075/0.425 Fines Ratio		0.78	
Plastic Limit (%)		23		PI x 0.425 Ratio (%)		608.1	
Plastic Index (%)	2	14	15	LS x 0.425 Ratio (%)		325.8	
Linear Shrinkage (%)		7.5		Particle Size Dist. Moisture Content (%)		10.9	

Shrinkage Observations Bending

Remarks

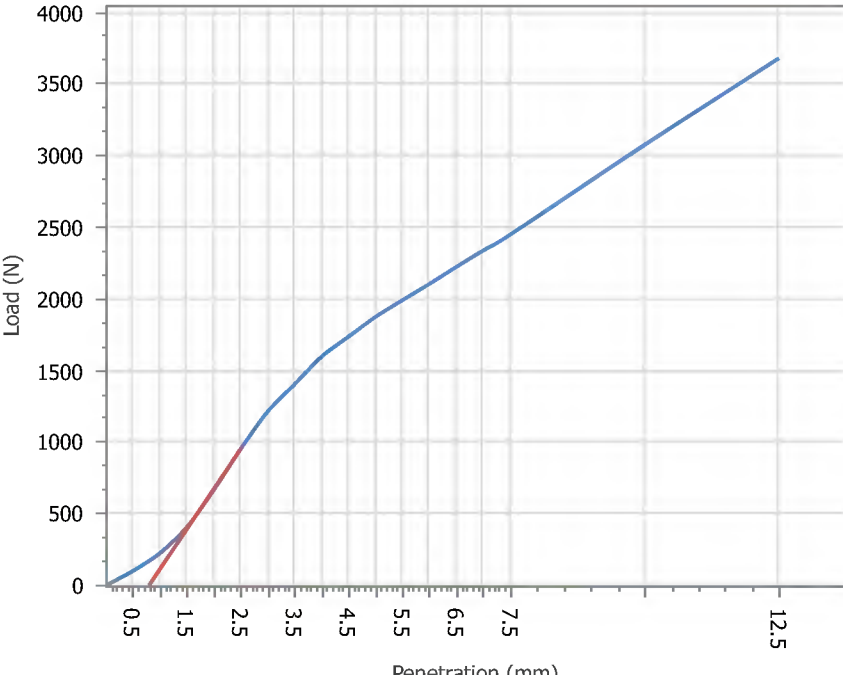
	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Sunil Sukhdeo Form ID: W85MCRep Rev 2

CALIFORNIA BEARING RATIO REPORT



Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73446-1 Project Number: 21791/P/1241 Lot Number: On site Stockpile Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 20/09/2024 Page 1 of 1
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Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/167857 Sampling Method AS1289.1.2.1 CI 6.2 Date Sampled 27/08/2024 Sampled By Dilush Anthonige Date Tested 13/09/2024 Material Source Imported Fill Material Type General Fill Client Reference -	Stockpile 1 Lot 509-511 Prep Material > 53mm (%) - Material Limit Start - Material Limit End - Compactive Effort Modified

Material Description General Fill

Maximum Dry Density (t/m³):	2.02	CBR PENETRATION PLOT 
Optimum Moisture Content (%):	9.5	
Field Moisture Content (%):	7.9	
Sample Percent Oversize (%):	9.0	
Oversize Included / Excluded	-	
Target Density Ratio (%):	95	
Target Moisture Ratio (%):	100	
Placement Dry Density (t/m³):	1.92	
Placement Dry Density Ratio (%):	95.0	
Placement Moisture Content (%):	9.4	
Placement Moisture Ratio (%):	98.0	
Test Condition / Soaking Period:	Soaked / 4 Days	
CBR Surcharge (kg)	4.5	
Dry Density After Soak (t/m³):	1.89	
Total Curing Time (hrs)	291	
Liquid Limit Method	Estimation	
Moisture (top 30mm) After Soak (%):	15.7	
Moisture (remainder) After Soak (%):	14.4	
CBR Swell (%):	1.5	
Minimum CBR Specification (%):	-	
CBR Value @ 5.0mm (%):	10	

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Sunil Sukhdeo Form ID: W2ASRep Rev 3



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnun Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73451-1 Project Number: 21791/P/1241 Lot Number: Lot 529 - 530 - LY1 Internal Test Request: 21791/T/30674 Client Reference/s: Level 1 Report Date / Page: 20/09/2024 Page 1 of 1
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168646	21791/S/168647	21791/S/168648	
ID / Client ID	-	-	-	
Lot Number	Lot 529 - 530 - LY1	Lot 529 - 530 - LY1	Lot 529 - 530 - LY1	
Date / Time Tested	10/09/2024 11:50	10/09/2024 12:05	10/09/2024 12:15	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14445.602	14439.873	14430.161	
N:	20968.324	20983.477	20995.625	
RL: (m)	19.735	19.782	19.702	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	0 / 0	16 / 17	20 / 21	
MDR Sample Number	21791/S/168646	21791/S/168647	21791/S/168648	
MDR Sample Date / Update	10/09/2024	10/09/2024	10/09/2024	
Assigned MDR (Yes / No)	No	No	No	
Moisture Test Results:				
Field Moisture Content (%)	14.2	11.1	12.1	
Optimum Moisture Content (%)	12.5	8.0	10.5	
Variation from OMC (%)	1.5% Wetter than OMC	3.0% Wetter than OMC	1.5% Wetter than OMC	
Moisture Ratio (%)	113.5	139.0	114.0	
Density Test Results:				
Field Wet Density (t/m ³)	2.24	2.27	2.24	
Field Dry Density (t/m ³)	1.96	2.05	2.00	
Maximum Dry Density (t/m ³)	1.99	2.07	2.00	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	98.5	98.5	100.0	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRep Rev 1
Accreditation Number: 1986 Corporate Site Number: 21791	



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73509-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench Foundation
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 24/09/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168060	21791/S/168061	21791/S/168062
ID / Client ID	-	-	-
Lot Number	Trench Foundation	Trench Foundation	Trench Foundation
Date / Time Tested	30/08/2024	30/08/2024	30/08/2024
Material Source	Existing	Existing	Existing
Material Type	Subgrade	Subgrade	Subgrade
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)	150 / 150 / 150	150 / 150 / 150	150 / 150 / 150
Standard or Modified	Modified	Modified	Modified
Stabilised Material Curing Time	-	-	-
Location	17.0m Trench Base Nth to Sth	66.0m Trench Base Nth to Sth	86.0m Trench Base Nth to Sth
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet / Dry (%)	8 / 9	4 / 4	0 / 0
MDR Sample Number	21791/S/168060	21791/S/168061	21791/S/168062
MDR Sample Date / Update	30/08/2024	30/08/2024	30/08/2024
Assigned MDR (Yes / No)	No	No	No
Moisture Test Results:			
Field Moisture Content (%)	8.2	10.9	9.3
Optimum Moisture Content (%)	9.5	10.0	9.0
Variation from OMC (%)	1.5% Drier than OMC	1.0% Wetter than OMC	0.0% Wetter than OMC
Moisture Ratio (%)	86.5	109.0	101.0
Density Test Results:			
Field Wet Density (t/m ³)	2.23	2.26	2.25
Field Dry Density (t/m ³)	2.06	2.03	2.06
Maximum Dry Density (t/m ³)	2.11	2.06	2.09
Dry Density Ratio Required (%)	95	95	95
Dry Density Ratio (%)	97.5	98.5	98.5

Remarks

<div style="text-align: center;">Accredited for compliance with ISO/IEC 17025 – Testing</div>  <p>Accreditation Number: 1986 Corporate Site Number: 21791</p>	 <p>Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3</p>
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LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

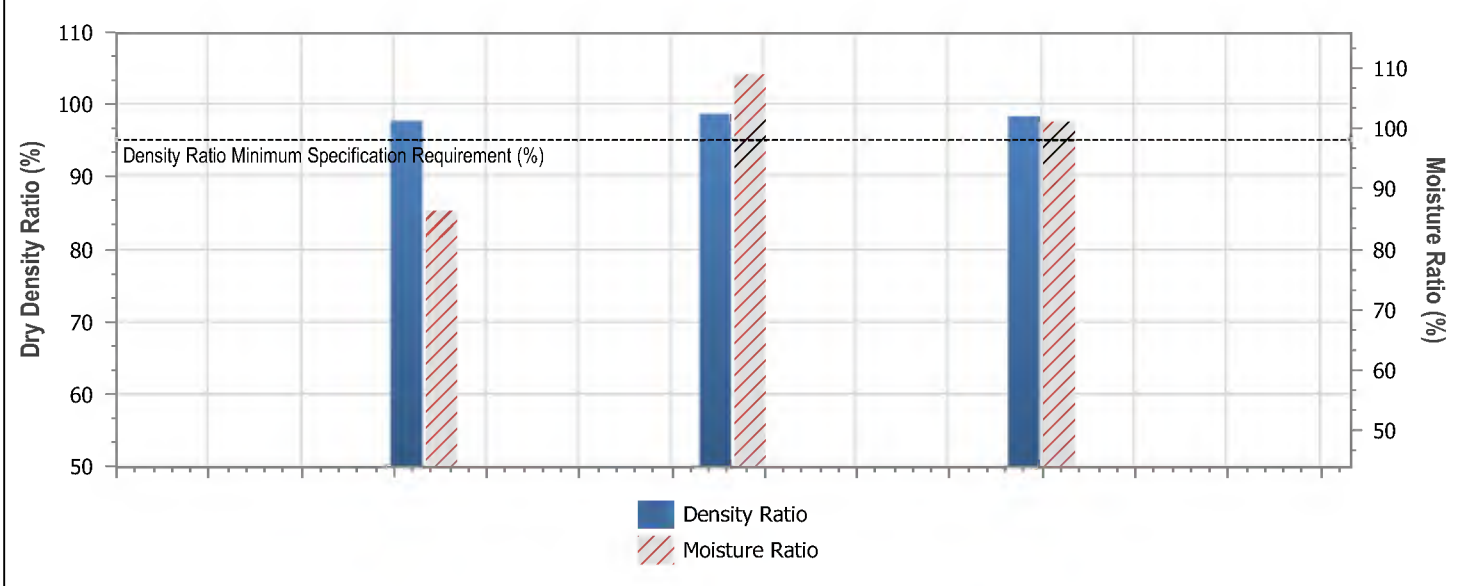
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number Calibration Last Updated Nominated Calibration Layer Depth (mm)	- - -	Material Source Material Type	- -
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LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	86.3	109.0	98.8	11.523
Dry Density Ratio (%)	97.7	98.6	98.2	0.458

Lot Number:	Trench Foundation
Mean Moisture Ratio (%):	98.8
Mean Density Ratio (%):	98.2

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnun Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73510-1 Project Number: 21791/P/1241 Lot Number: Trench LY1 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 24/09/2024 Page 1 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168063	21791/S/168064	21791/S/168065
ID / Client ID	-	-	-
Lot Number	Trench LY1	Trench LY1	Trench LY1
Date / Time Tested	30/08/2024	30/08/2024	30/08/2024
Material Source	Existing	Existing	Existing
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 / 150 / 200	175 / 150 / 200	175 / 150 / 200
Standard or Modified	Modified	Modified	Modified
Stabilised Material Curing Time	-	-	-
Location	21.0m Backfill Nth to Sth	47.0m Backfill Nth to Sth	82.0m Backfill Nth to Sth
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet / Dry (%)	4 / 4	7 / 8	3 / 3
MDR Sample Number	21791/S/168063	21791/S/168064	21791/S/168065
MDR Sample Date / Update	30/08/2024	30/08/2024	30/08/2024
Assigned MDR (Yes / No)	No	No	No
Moisture Test Results:			
Field Moisture Content (%)	11.7	10.9	12.1
Optimum Moisture Content (%)	11.0	10.0	11.5
Variation from OMC (%)	0.5% Wetter than OMC	1.0% Wetter than OMC	0.5% Wetter than OMC
Moisture Ratio (%)	105.5	111.0	104.5
Density Test Results:			
Field Wet Density (t/m ³)	2.28	2.26	2.27
Field Dry Density (t/m ³)	2.04	2.04	2.03
Maximum Dry Density (t/m ³)	2.06	2.07	2.05
Dry Density Ratio Required (%)	-	-	-
Dry Density Ratio (%)	99.0	98.5	98.5

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

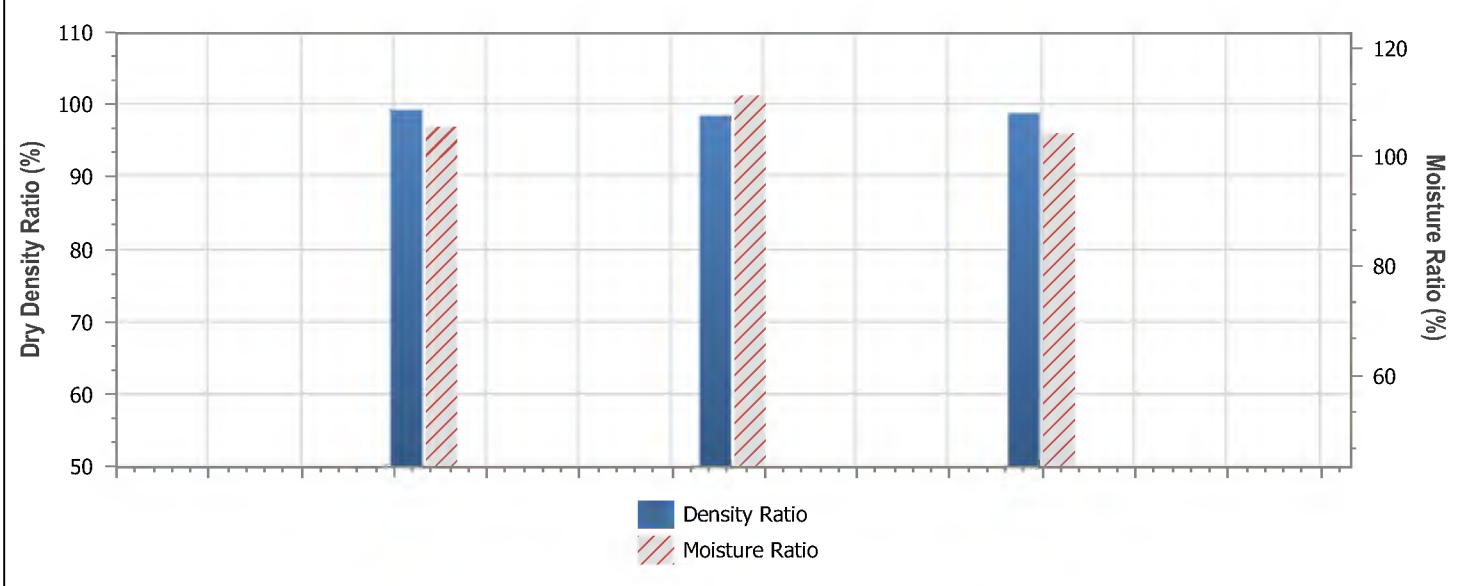
Client: BMD Urban Pty Ltd	Report Number: 21791/R/73510-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY1
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 24/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	104.3	111.2	107.0	3.707
Dry Density Ratio (%)	98.4	99.2	98.8	0.404

Lot Number:	Trench LY1
Mean Moisture Ratio (%):	107.0
Mean Density Ratio (%):	98.8

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73511-1 Project Number: 21791/P/1241 Lot Number: Trench LY3 Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 24/09/2024 Page 1 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168069	21791/S/168070	21791/S/168071
ID / Client ID	-	-	-
Lot Number	Trench LY3	Trench LY3	Trench LY3
Date / Time Tested	30/08/2024	30/08/2024	30/08/2024
Material Source	Existing	Existing	Existing
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 / 150 / 200	175 / 150 / 200	175 / 150 / 200
Standard or Modified	Modified	Modified	Modified
Stabilised Material Curing Time	-	-	-
Location	34.0m Backfill Nth to Sth	56.0m Backfill Nth to Sth	99.0m Backfill Nth to Sth
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet / Dry (%)	6 / 6	0 / 0	3 / 3
MDR Sample Number	21791/S/168069	21791/S/168070	21791/S/168071
MDR Sample Date / Update	30/08/2024	30/08/2024	30/08/2024
Assigned MDR (Yes / No)	No	No	No
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	12.2	11.6	11.8
Optimum Moisture Content (%)	10.0	9.0	9.0
Variation from OMC (%)	2.0% Wetter than OMC	2.5% Wetter than OMC	2.5% Wetter than OMC
Moisture Ratio (%)	121.0	126.0	128.5
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.27	2.29	2.29
Field Dry Density (t/m ³)	2.02	2.05	2.05
Maximum Dry Density (t/m ³)	2.08	2.16	2.11
Dry Density Ratio Required (%)	95	95	95
Dry Density Ratio (%)	97.0	95.5	97.0

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

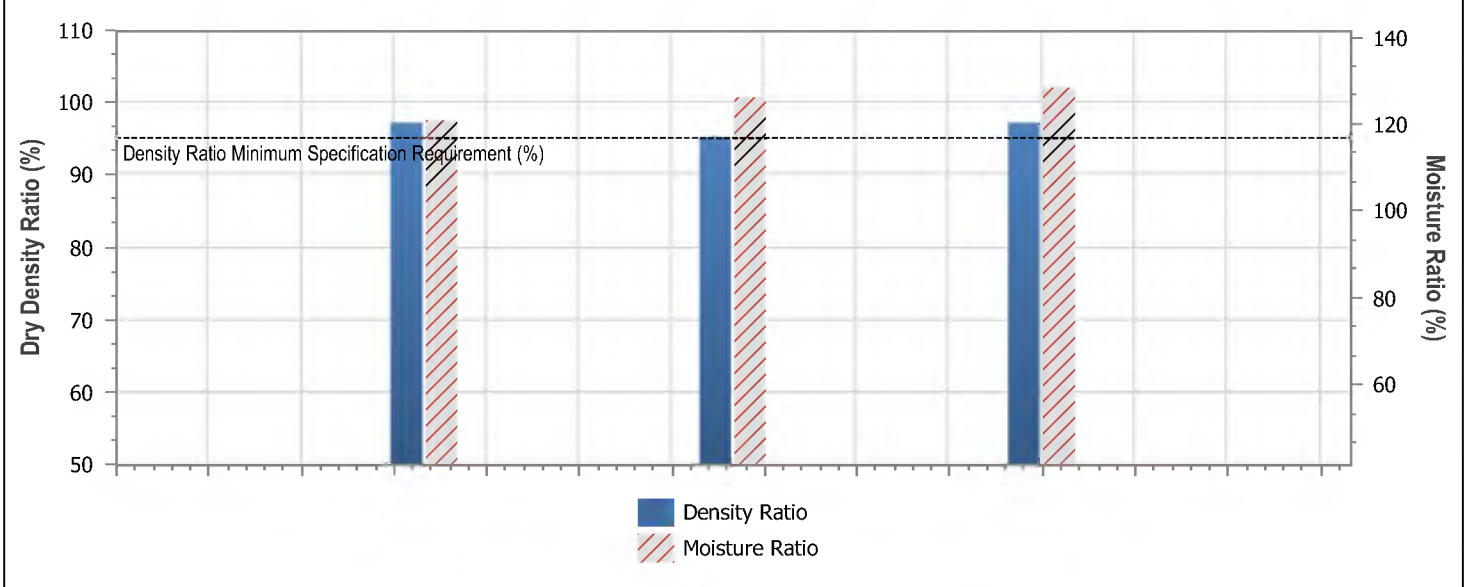
Client: BMD Urban Pty Ltd	Report Number: 21791/R/73511-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY3
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 24/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	120.8	128.3	125.1	3.855
Dry Density Ratio (%)	95.3	97.1	96.5	1.039

Lot Number:	Trench LY3
Mean Moisture Ratio (%):	125.1
Mean Density Ratio (%):	96.5

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3

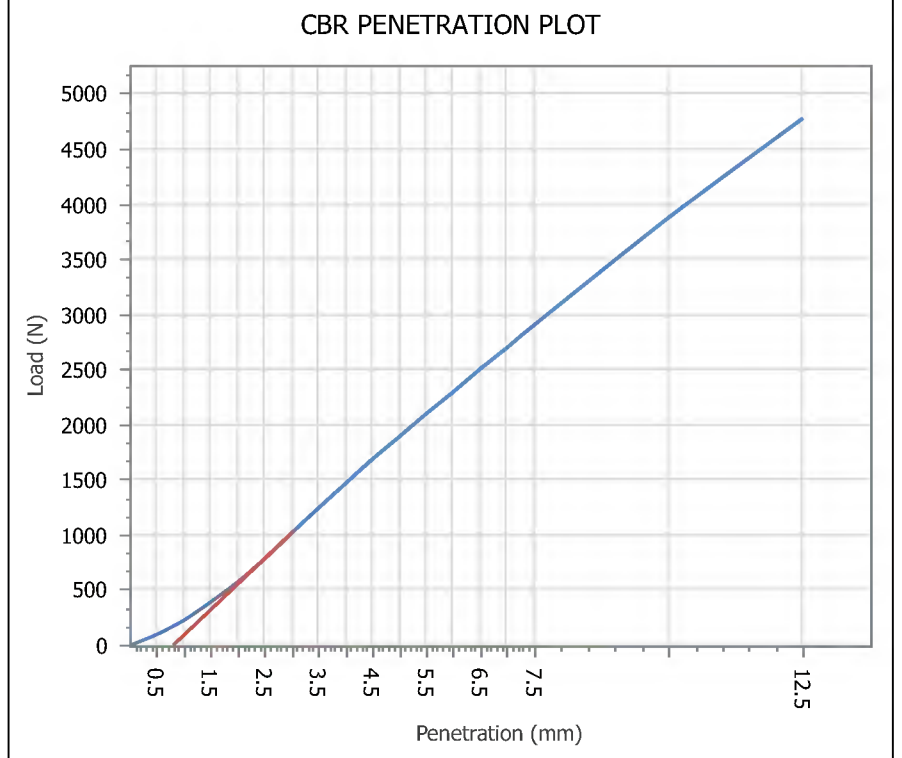
CALIFORNIA BEARING RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73512-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 519 - 523 LY 2
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 24/09/2024 Page 1 of 1



Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/168102	E: 14448.649
Sampling Method AS1289.1.2.1 CI 6.4b	N: 21067.207
Date Sampled 30/08/2024	RL: (m) 20.905
Sampled By Liam Welsh	Prep Material > 53mm (%) -
Date Tested 15/09/2024	Material Limit Start -
Material Source Imported Fill	Material Limit End -
Material Type General Fill	Compactive Effort Modified
Client Reference -	

Material Description General Fill

Maximum Dry Density (t/m ³):	2.02
Optimum Moisture Content (%):	10.5
Field Moisture Content (%):	10.5
Sample Percent Oversize (%):	11.0
Oversize Included / Excluded	Excluded
Target Density Ratio (%):	95
Target Moisture Ratio (%):	100
Placement Dry Density (t/m ³):	1.93
Placement Dry Density Ratio (%):	95.5
Placement Moisture Content (%):	10.3
Placement Moisture Ratio (%):	96.5
Test Condition / Soaking Period:	Soaked / 4 Days
CBR Surcharge (kg)	4.5
Dry Density After Soak (t/m ³):	1.89
Total Curing Time (hrs)	192
Liquid Limit Method	Estimation
Moisture (top 30mm) After Soak (%)	16.0
Moisture (remainder) After Soak (%)	16.0
CBR Swell (%):	2.0
Minimum CBR Specification (%):	-
CBR Value @ 5.0mm (%):	11



Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73515-1 Project Number: 21791/P/1241 Lot Number: Lot 529 - 530 - LY2 Internal Test Request: 21791/T/30674 Client Reference/s: Level 1 Report Date / Page: 24/09/2024 Page 1 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168675	21791/S/168676	21791/S/168677	
ID / Client ID	-	-	-	
Lot Number	Lot 529 - 530 - LY2	Lot 529 - 530 - LY2	Lot 529 - 530 - LY2	
Date / Time Tested	11/09/2024 08:30	11/09/2024 08:45	11/09/2024 08:55	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14434.598	14443.422	14443.969	
N:	20989.951	20979.719	20972.059	
RL: (m)	20.026	20.059	19.946	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	9 / 9	18 / 20	18 / 19	
MDR Sample Number	21791/S/168675	21791/S/168676	21791/S/168677	
MDR Sample Date / Update	11/09/2024	11/09/2024	11/09/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	11.6	10.4	11.2	
Optimum Moisture Content (%)	11.5	10.0	10.5	
Variation from OMC (%)	0.5% Wetter than OMC	0.5% Wetter than OMC	1.0% Wetter than OMC	
Moisture Ratio (%)	102.5	104.0	107.5	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.10	2.21	2.09	
Field Dry Density (t/m ³)	1.88	2.00	1.88	
Maximum Dry Density (t/m ³)	1.99	2.05	1.96	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	94.5	97.5	95.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

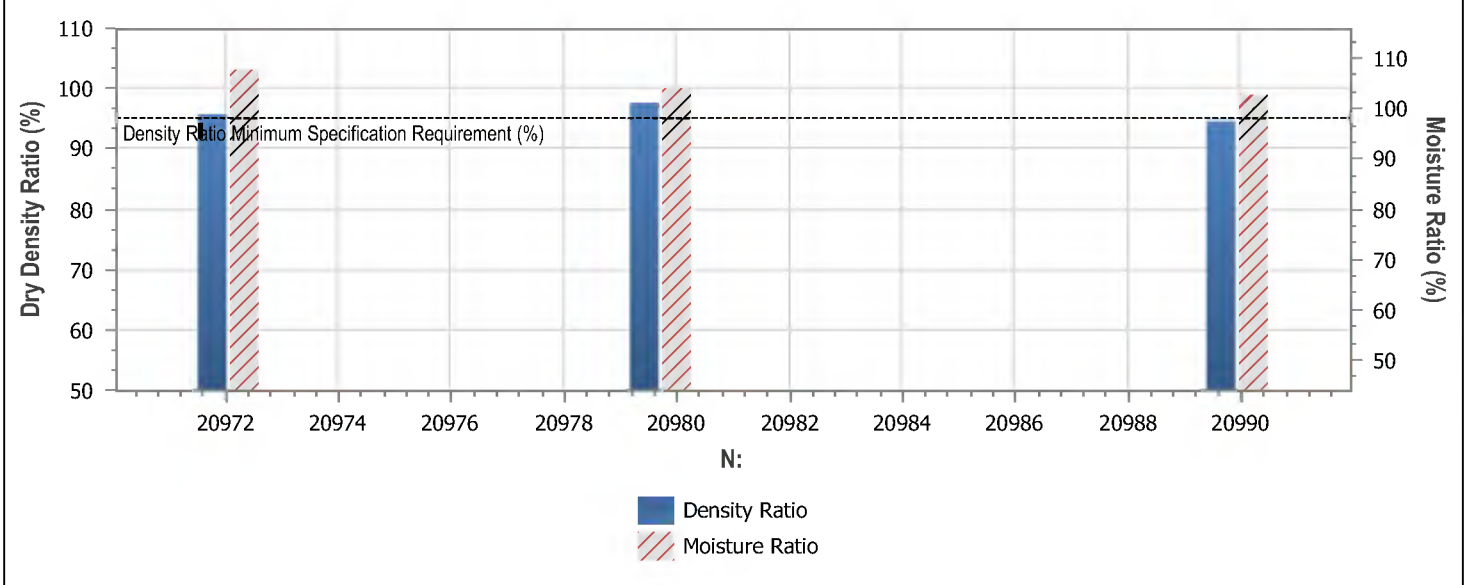
Client: BMD Urban Pty Ltd	Report Number: 21791/R/73515-1
Client Address: PO BOX 197, Wynnnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 529 - 530 - LY2
Location: Darwin	Internal Test Request: 21791/T/30674
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 24/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	102.7	107.7	104.8	2.594
Dry Density Ratio (%)	94.5	97.6	95.9	1.572

Lot Number:	Lot 529 - 530 - LY2
Mean Moisture Ratio (%):	104.8
Mean Density Ratio (%):	95.9

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73517-1
Client Address: PO BOX 197, Wynnunm	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 517,520 - 515,523 - LY4
Location: Darwin	Internal Test Request: 21791/T/30674
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 24/09/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/168678	21791/S/168679	21791/S/168680	
ID / Client ID	-	-	-	
Lot Number	Lot 517,520 - 515,523 - LY4	Lot 517,520 - 515,523 - LY4	Lot 517,520 - 515,523 - LY4	
Date / Time Tested	11/09/2024 11:00	11/09/2024 11:10	11/09/2024 11:35	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14450.241	14448.713	14432.004	
N:	21066.004	21085.330	21087.675	
RL: (m)	21.354	21.408	21.292	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	15 / 16	6 / 6	10 / 11	
MDR Sample Number	21791/S/168678	21791/S/168679	21791/S/168680	
MDR Sample Date / Update	11/09/2024	11/09/2024	11/09/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	10.5	12.3	9.9	
Optimum Moisture Content (%)	8.5	10.0	9.0	
Variation from OMC (%)	2.0% Wetter than OMC	2.5% Wetter than OMC	1.0% Wetter than OMC	
Moisture Ratio (%)	123.5	123.0	111.0	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.23	2.24	2.18	
Field Dry Density (t/m ³)	2.02	1.99	1.98	
Maximum Dry Density (t/m ³)	2.08	2.05	2.07	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	97.0	97.5	95.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

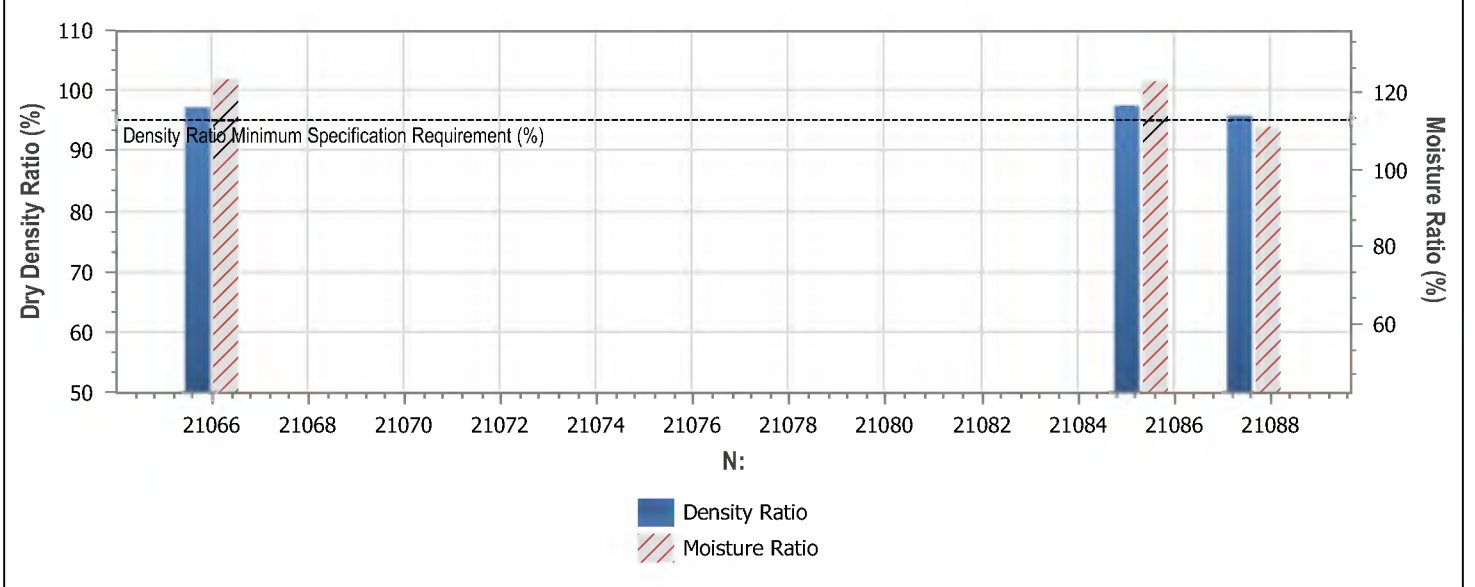
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Client Address: PO BOX 197, Wynnnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 517,520 - 515,523 - LY4
Location: Darwin	Internal Test Request: 21791/T/30674
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 24/09/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	111.2	123.5	119.2	6.962
Dry Density Ratio (%)	95.7	97.3	96.7	0.872

Lot Number:	Lot 517,520 - 515,523 - LY4
Mean Moisture Ratio (%):	119.2
Mean Density Ratio (%):	96.7

Remarks

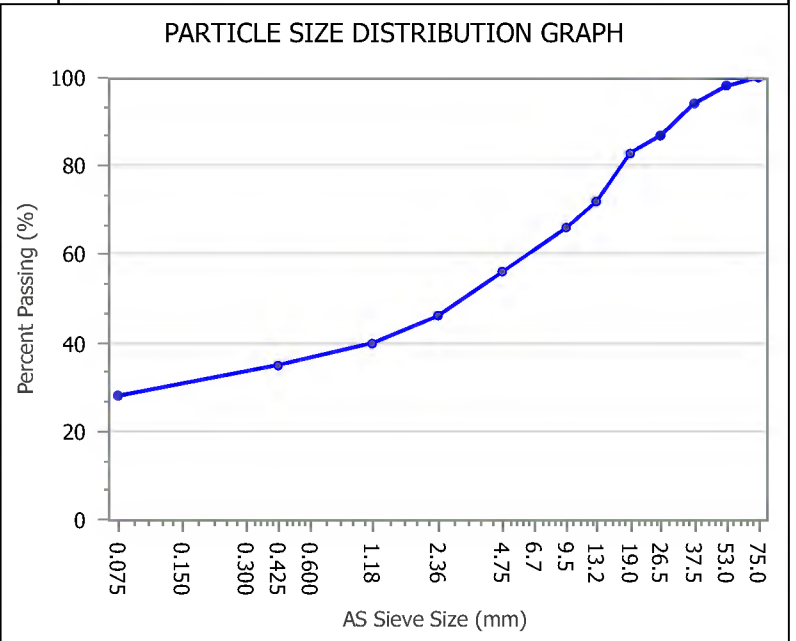
	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3

QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73519-1 Project Number: 21791/P/1241 Lot Number: Lot 529 - 530 - LY1 Internal Test Request: 21791/T/30674 Client Reference/s: Level 1 Report Date / Page: 24/09/2024 Page 1 of 1
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1	
Sample Number 21791/S/168647 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 10/09/2024 Sampled By Dilush Anthonige Date Tested 20/09/2024 Drying Methods PSD / ATT: Air Dried Atterberg Preparation Dry Sieved	E: 14439.873 N: 20983.477 RL: (m) 19.782 Material Source Imported Fill Material Type General Fill Material Description General Fill

AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
75.0		100	
53.0		98	
37.5		94	
26.5		87	
19.0		83	
13.2		72	
9.5		66	
4.75		56	
2.36		46	
1.18		40	
0.425		35	
0.075		28	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		34		0.075/0.425 Fines Ratio		0.80	
Plastic Limit (%)		24		PI x 0.425 Ratio (%)		348.7	
Plastic Index (%)		10		LS x 0.425 Ratio (%)		209.2	
Linear Shrinkage (%)		6.0		Particle Size Dist. Moisture Content (%)		12.9	
Shrinkage Observations	N/A						

Remarks

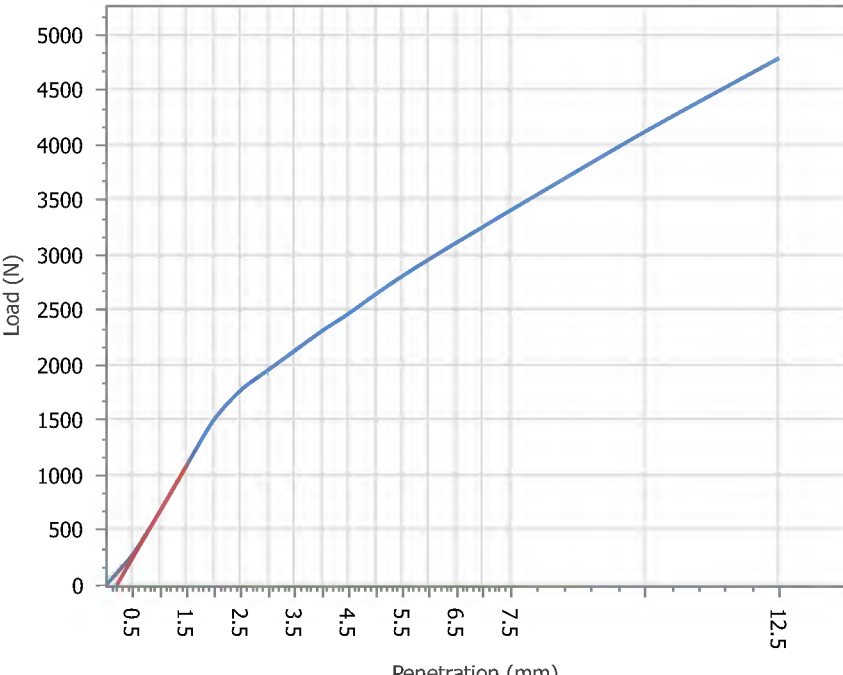
	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W85MCRP Rev 2

CALIFORNIA BEARING RATIO REPORT



Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73550-1 Project Number: 21791/P/1241 Lot Number: Trench Foundation Internal Test Request: 21791/T/30518 Client Reference/s: Level 1 Report Date / Page: 26/09/2024 Page 1 of 1
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Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/168061 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 30/08/2024 Sampled By Liam Welsh Date Tested 24/09/2024 Material Source Existing Material Type Subgrade Client Reference -	Location 66.0m Trench Base Nth to Sth Prep Material > 53mm (%) - Material Limit Start - Material Limit End - Compactive Effort Modified

Material Description Subgrade

Maximum Dry Density (t/m³): 2.06 Optimum Moisture Content (%): 10.5 Field Moisture Content (%): 11.2 Sample Percent Oversize (%): 4.0 Oversize Included / Excluded Excluded Target Density Ratio (%): 95 Target Moisture Ratio (%): 100 Placement Dry Density (t/m³): 1.96 Placement Dry Density Ratio (%): 95.0 Placement Moisture Content (%): 10.3 Placement Moisture Ratio (%): 99.0 Test Condition / Soaking Period: Soaked / 4 Days CBR Surcharge (kg) 4.5 Dry Density After Soak (t/m³): 1.93 Total Curing Time (hrs) 336 Liquid Limit Method Estimation Moisture (top 30mm) After Soak (%): 13.7 Moisture (remainder) After Soak (%): 13.9 CBR Swell (%): 1.5 Minimum CBR Specification (%): - CBR Value @ 2.5mm (%): 14	CBR PENETRATION PLOT 
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Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3	

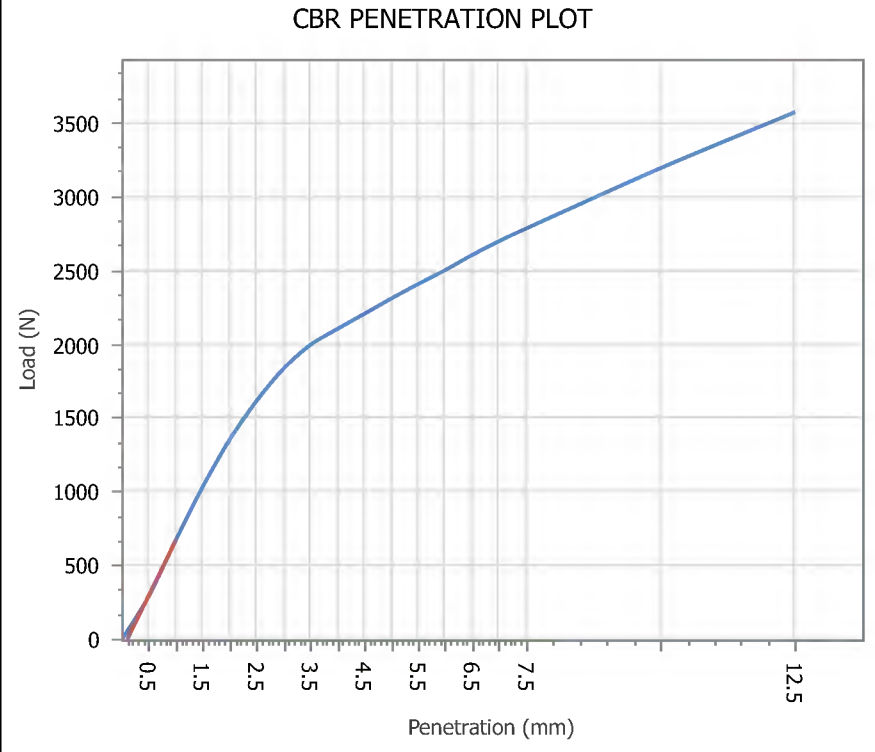
CALIFORNIA BEARING RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73551-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY1
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 26/09/2024 Page 1 of 1



Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/168064	Location 47.0m
Sampling Method AS1289.1.2.1 CI 6.4b	Backfill
Date Sampled 30/08/2024	Nth to Sth
Sampled By Liam Welsh	Prep Material > 53mm (%) -
Date Tested 24/09/2024	Material Limit Start -
Material Source Existing	Material Limit End -
Material Type General Fill	Compactive Effort Modified
Client Reference -	

Material Description General Fill

Maximum Dry Density (t/m ³):	2.06
Optimum Moisture Content (%):	10.5
Field Moisture Content (%):	11.6
Sample Percent Oversize (%):	0.0
Oversize Included / Excluded	Excluded
Target Density Ratio (%):	95
Target Moisture Ratio (%):	100
Placement Dry Density (t/m ³):	1.96
Placement Dry Density Ratio (%):	95.0
Placement Moisture Content (%):	10.4
Placement Moisture Ratio (%):	97.0
Test Condition / Soaking Period:	Soaked / 4 Days
CBR Surcharge (kg)	4.5
Dry Density After Soak (t/m ³):	1.94
Total Curing Time (hrs)	334
Liquid Limit Method	Estimation
Moisture (top 30mm) After Soak (%)	14.8
Moisture (remainder) After Soak (%)	13.6
CBR Swell (%):	1.5
Minimum CBR Specification (%):	-
CBR Value @ 2.5mm (%):	13



Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3

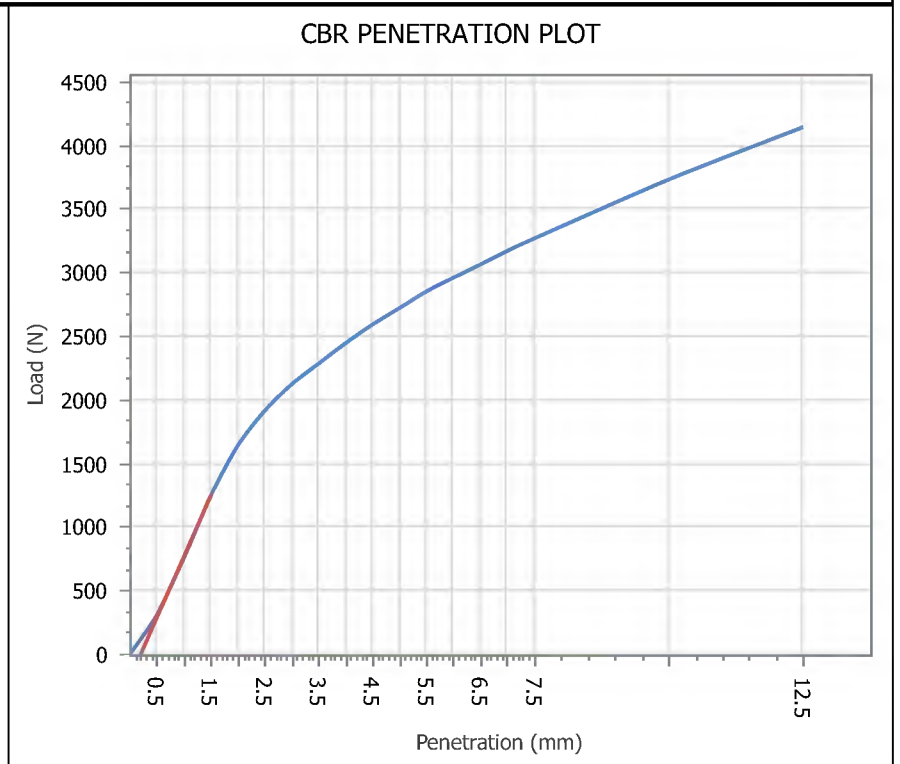
CALIFORNIA BEARING RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73552-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Trench LY4
Location: Darwin	Internal Test Request: 21791/T/30518
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 26/09/2024 Page 1 of 1



Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/168073	Location 42.0m
Sampling Method AS1289.1.2.1 CI 6.4b	Backfill
Date Sampled 30/08/2024	Nth to Sth
Sampled By Liam Welsh	Prep Material > 53mm (%) -
Date Tested 21/09/2024	Material Limit Start -
Material Source Existing	Material Limit End -
Material Type General Fill	Compactive Effort Modified
Client Reference -	

Material Description General Fill

Maximum Dry Density (t/m ³):	2.10
Optimum Moisture Content (%):	9.0
Field Moisture Content (%):	11.4
Sample Percent Oversize (%):	0.0
Oversize Included / Excluded	Excluded
Target Density Ratio (%):	95
Target Moisture Ratio (%):	100
Placement Dry Density (t/m ³):	2.01
Placement Dry Density Ratio (%):	95.5
Placement Moisture Content (%):	9.0
Placement Moisture Ratio (%):	98.0
Test Condition / Soaking Period:	Soaked / 4 Days
CBR Surcharge (kg)	4.5
Dry Density After Soak (t/m ³):	1.98
Total Curing Time (hrs)	296
Liquid Limit Method	Estimation
Moisture (top 30mm) After Soak (%)	13.2
Moisture (remainder) After Soak (%)	13.7
CBR Swell (%):	1.0
Minimum CBR Specification (%):	-
CBR Value @ 2.5mm (%):	15



Remarks

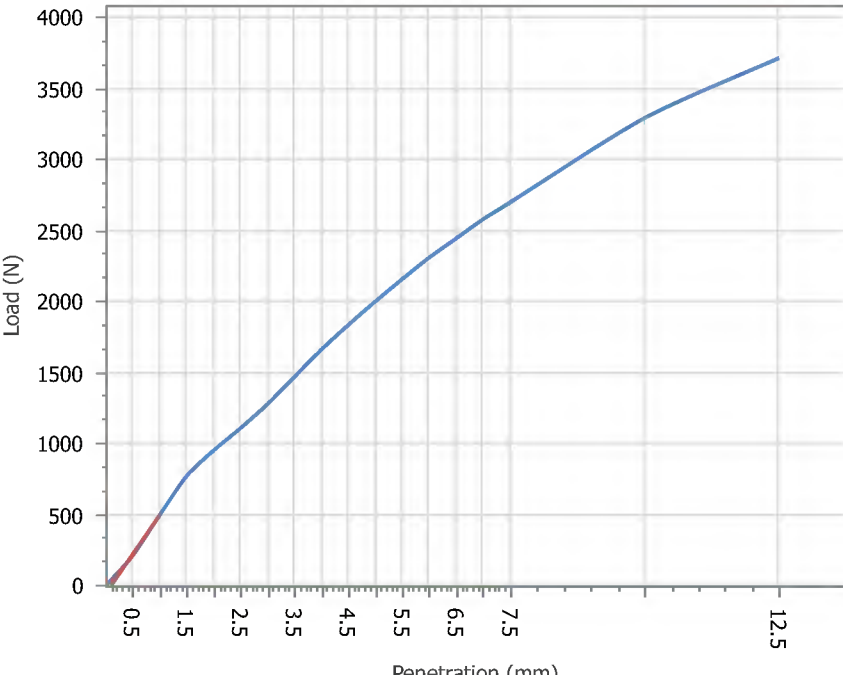
	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3

CALIFORNIA BEARING RATIO REPORT



Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73562-1 Project Number: 21791/P/1241 Lot Number: Lot 515 - 517 - LY1 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 26/09/2024 Page 1 of 1
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Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/168170 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 2/09/2024 Sampled By Dilush Anthonige Date Tested 24/09/2024 Material Source Imported Fill Material Type General Fill Client Reference -	E: 14408.735 N: 21104.619 RL: (m) 20.555 Prep Material > 53mm (%) - Material Limit Start - Material Limit End - Compactive Effort Modified

Material Description General fill

Maximum Dry Density (t/m³): 2.06 Optimum Moisture Content (%): 9.0 Field Moisture Content (%): 12.0 Sample Percent Oversize (%): 2.0 Oversize Included / Excluded Excluded Target Density Ratio (%): 95 Target Moisture Ratio (%): 100 Placement Dry Density (t/m³): 1.96 Placement Dry Density Ratio (%): 95.0 Placement Moisture Content (%): 9.1 Placement Moisture Ratio (%): 99.0 Test Condition / Soaking Period: Soaked / 4 Days CBR Surcharge (kg) 4.5 Dry Density After Soak (t/m³): 1.91 Total Curing Time (hrs) 272 Liquid Limit Method Estimation Moisture (top 30mm) After Soak (%): 16.1 Moisture (remainder) After Soak (%): 15.1 CBR Swell (%): 2.5 Minimum CBR Specification (%): - CBR Value @ 5.0mm (%): 10	<h3>CBR PENETRATION PLOT</h3> 
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Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3	

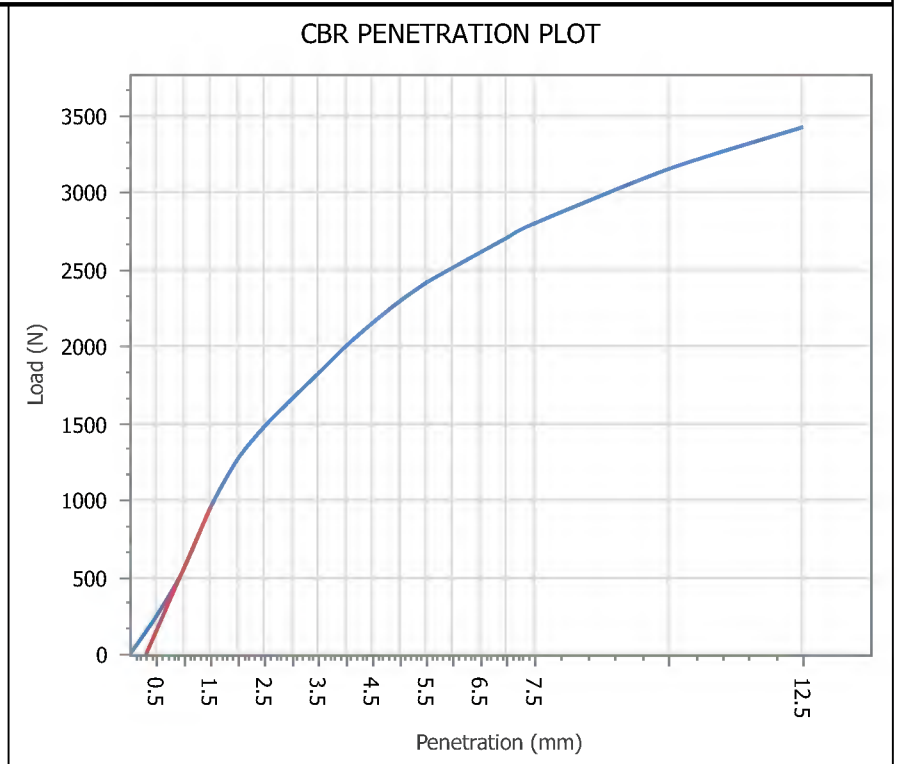
CALIFORNIA BEARING RATIO REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73563-1 Project Number: 21791/P/1241 Lot Number: Lot 519 - 523- LY3 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 26/09/2024 Page 1 of 1
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Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/168300 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 3/09/2024 Sampled By Dilush Anthonige Date Tested 25/09/2024 Material Source Imported Fill Material Type General Fill Client Reference -	E: 14452.178 N: 21061.039 RL: (m) 21.068 Prep Material > 53mm (%) - Material Limit Start - Material Limit End - Compactive Effort Modified

Material Description General Fill

Maximum Dry Density (t/m ³):	2.01
Optimum Moisture Content (%):	12.0
Field Moisture Content (%):	12.7
Sample Percent Oversize (%):	0.0
Oversize Included / Excluded	Excluded
Target Density Ratio (%):	95
Target Moisture Ratio (%):	100
Placement Dry Density (t/m ³):	1.90
Placement Dry Density Ratio (%):	95.0
Placement Moisture Content (%):	12.0
Placement Moisture Ratio (%):	101.0
Test Condition / Soaking Period:	Soaked / 4 Days
CBR Surcharge (kg)	4.5
Dry Density After Soak (t/m ³):	1.87
Total Curing Time (hrs)	216
Liquid Limit Method	Estimation
Moisture (top 30mm) After Soak (%)	16.9
Moisture (remainder) After Soak (%)	16.6
CBR Swell (%):	2.0
Minimum CBR Specification (%):	-
CBR Value @ 2.5mm (%):	12



Remarks

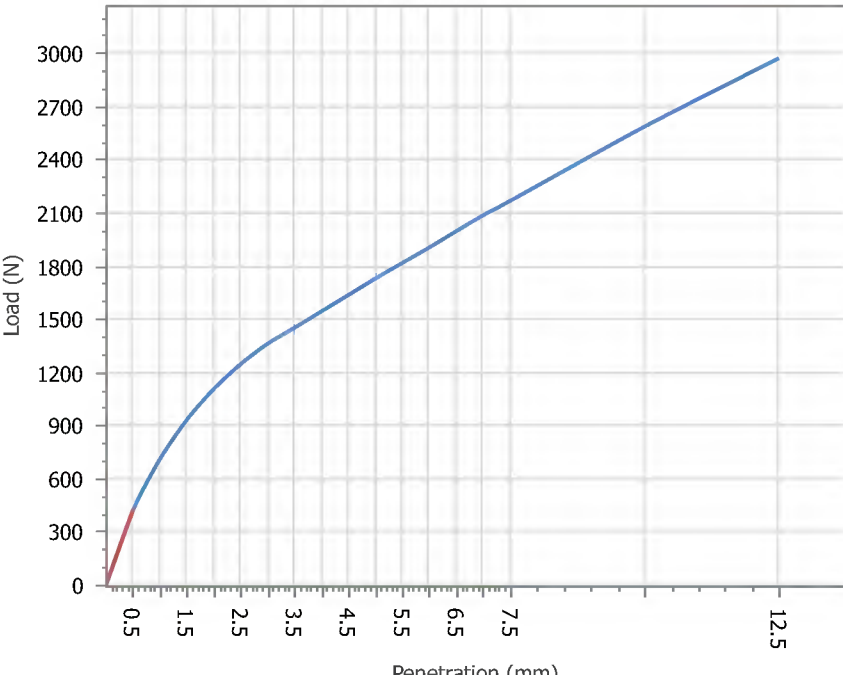
	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3

CALIFORNIA BEARING RATIO REPORT



Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73761-1 Project Number: 21791/P/1241 Lot Number: Lot 532 - 536- LY1 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 2/10/2024 Page 1 of 1
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Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/168303 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 3/09/2024 Sampled By Dilush Anthonige Date Tested 1/10/2024 Material Source Imported Fill Material Type General Fill Client Reference -	E: 14491.155 N: 21016.372 RL: (m) 20.809 Prep Material > 53mm (%) - Material Limit Start - Material Limit End - Compactive Effort Modified

Material Description General Fill

<table style="width: 100%; border-collapse: collapse;"> <tr><td>Maximum Dry Density (t/m³):</td><td style="text-align: right;">1.98</td></tr> <tr><td>Optimum Moisture Content (%):</td><td style="text-align: right;">13.5</td></tr> <tr><td>Field Moisture Content (%):</td><td style="text-align: right;">13.9</td></tr> <tr><td>Sample Percent Oversize (%):</td><td style="text-align: right;">0.0</td></tr> <tr><td>Oversize Included / Excluded</td><td style="text-align: right;">Excluded</td></tr> <tr><td>Target Density Ratio (%):</td><td style="text-align: right;">95</td></tr> <tr><td>Target Moisture Ratio (%):</td><td style="text-align: right;">100</td></tr> <tr><td>Placement Dry Density (t/m³):</td><td style="text-align: right;">1.88</td></tr> <tr><td>Placement Dry Density Ratio (%):</td><td style="text-align: right;">95.0</td></tr> <tr><td>Placement Moisture Content (%):</td><td style="text-align: right;">13.2</td></tr> <tr><td>Placement Moisture Ratio (%):</td><td style="text-align: right;">98.5</td></tr> <tr><td>Test Condition / Soaking Period:</td><td style="text-align: right;">Soaked / 4 Days</td></tr> <tr><td>CBR Surcharge (kg)</td><td style="text-align: right;">4.5</td></tr> <tr><td>Dry Density After Soak (t/m³):</td><td style="text-align: right;">1.88</td></tr> <tr><td>Total Curing Time (hrs)</td><td style="text-align: right;">24</td></tr> <tr><td>Liquid Limit Method</td><td style="text-align: right;">Estimation</td></tr> <tr><td>Moisture (top 30mm) After Soak (%)</td><td style="text-align: right;">15.0</td></tr> <tr><td>Moisture (remainder) After Soak (%)</td><td style="text-align: right;">15.6</td></tr> <tr><td>CBR Swell (%):</td><td style="text-align: right;">0.5</td></tr> <tr><td>Minimum CBR Specification (%):</td><td style="text-align: right;">-</td></tr> <tr><td>CBR Value @ 2.5mm (%):</td><td style="text-align: right;">10</td></tr> </table>	Maximum Dry Density (t/m ³):	1.98	Optimum Moisture Content (%):	13.5	Field Moisture Content (%):	13.9	Sample Percent Oversize (%):	0.0	Oversize Included / Excluded	Excluded	Target Density Ratio (%):	95	Target Moisture Ratio (%):	100	Placement Dry Density (t/m ³):	1.88	Placement Dry Density Ratio (%):	95.0	Placement Moisture Content (%):	13.2	Placement Moisture Ratio (%):	98.5	Test Condition / Soaking Period:	Soaked / 4 Days	CBR Surcharge (kg)	4.5	Dry Density After Soak (t/m ³):	1.88	Total Curing Time (hrs)	24	Liquid Limit Method	Estimation	Moisture (top 30mm) After Soak (%)	15.0	Moisture (remainder) After Soak (%)	15.6	CBR Swell (%):	0.5	Minimum CBR Specification (%):	-	CBR Value @ 2.5mm (%):	10	<h3>CBR PENETRATION PLOT</h3>  <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td>0</td><td>300</td><td>600</td><td>900</td><td>1200</td><td>1500</td><td>1800</td><td>2100</td><td>2400</td><td>2700</td><td>3000</td></tr> <tr><td>0.5</td><td>1.5</td><td>2.5</td><td>3.5</td><td>4.5</td><td>5.5</td><td>6.5</td><td>7.5</td><td></td><td></td><td>12.5</td></tr> </table> <p style="text-align: center;">Penetration (mm)</p>	0	300	600	900	1200	1500	1800	2100	2400	2700	3000	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5			12.5
Maximum Dry Density (t/m ³):	1.98																																																																
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CBR Value @ 2.5mm (%):	10																																																																
0	300	600	900	1200	1500	1800	2100	2400	2700	3000																																																							
0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5			12.5																																																							

Remarks

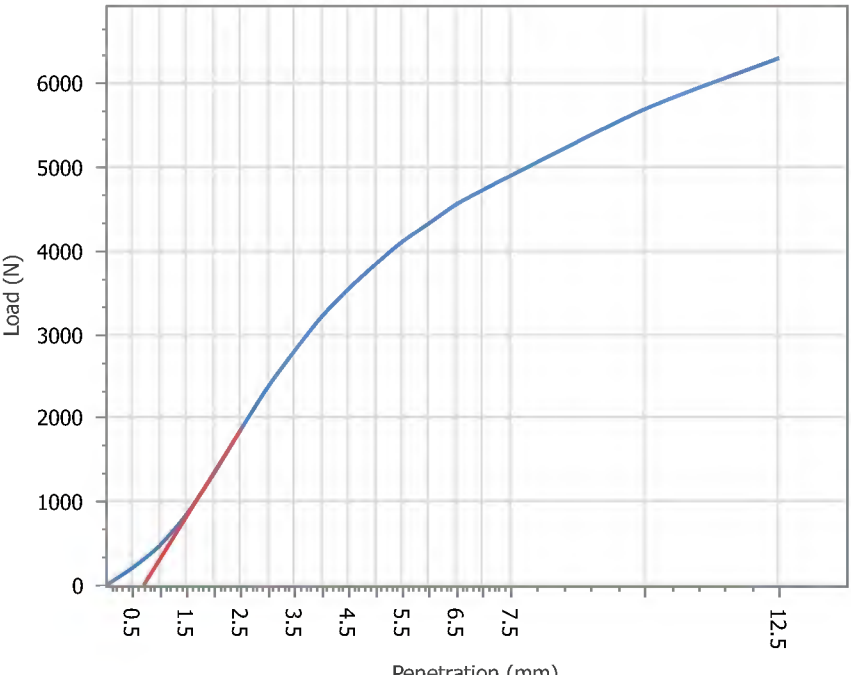
	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3

CALIFORNIA BEARING RATIO REPORT



Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73762-1 Project Number: 21791/P/1241 Lot Number: Lot 512 - 514 LY1 Internal Test Request: 21791/T/30582 Client Reference/s: Level 1 Report Date / Page: 2/10/2024 Page 1 of 1
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Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/168422 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 6/09/2024 Sampled By Dilush Anthonige Date Tested 1/10/2024 Material Source Imported Fill Material Type General Fill Client Reference -	E: 14395.337 N: 21117.482 RL: (m) 20.676 Prep Material > 53mm (%) - Material Limit Start - Material Limit End - Compactive Effort Modified

Material Description General Fill

Maximum Dry Density (t/m³): 2.14 Optimum Moisture Content (%): 9.5 Field Moisture Content (%): 10.9 Sample Percent Oversize (%): 4.0 Oversize Included / Excluded Excluded Target Density Ratio (%): 95 Target Moisture Ratio (%): 100 Placement Dry Density (t/m³): 2.03 Placement Dry Density Ratio (%): 95.0 Placement Moisture Content (%): 9.7 Placement Moisture Ratio (%): 101.0 Test Condition / Soaking Period: Soaked / 4 Days CBR Surcharge (kg) 4.5 Dry Density After Soak (t/m³): 2.00 Total Curing Time (hrs) 25 Liquid Limit Method Estimation Moisture (top 30mm) After Soak (%): 13.0 Moisture (remainder) After Soak (%): 13.8 CBR Swell (%): 1.5 Minimum CBR Specification (%): - CBR Value @ 5.0mm (%): 20	<h3>CBR PENETRATION PLOT</h3> 
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Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3	



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73767-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: 521-523 LS - LY1
Location: Darwin	Internal Test Request: 21791/T/30807
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 2/10/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/169195	21791/S/169196	
ID / Client ID	-	-	
Lot Number	521-523 LS - LY1	515-518 LS - LY5	
Date / Time Tested	24/09/2024 09:45	24/09/2024 10:00	
Material Source	Imported Fill	Imported Fill	
Material Type	General Fill	General Fill	
Sampling Method	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	
Standard or Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	
E:	14464.360	14427.540	
N:	21061.099	21105.485	
RL: (m)	21.123	21.188	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	13 / 14	9 / 10	
MDR Sample Number	21791/S/169195	21791/S/169196	
MDR Sample Date / Update	24/09/2024	24/09/2024	
Assigned MDR (Yes / No)	No	No	
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	10.1	11.2	
Optimum Moisture Content (%)	9.5	11.0	
Variation from OMC (%)	1.0% Wetter than OMC	0.5% Wetter than OMC	
Moisture Ratio (%)	108.5	103.5	
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.24	2.19	
Field Dry Density (t/m ³)	2.03	1.97	
Maximum Dry Density (t/m ³)	2.04	2.01	
Dry Density Ratio Required (%)	95	95	
Dry Density Ratio (%)	99.5	98.0	

Remarks

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	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

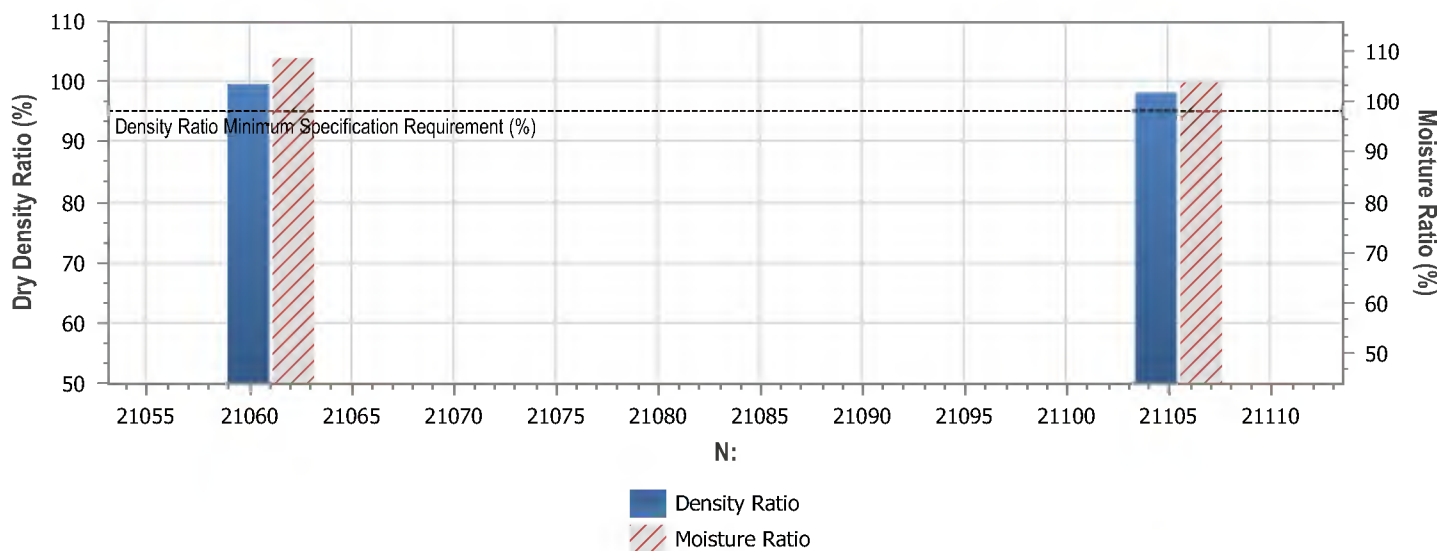
Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnun Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73767-1 Project Number: 21791/P/1241 Lot Number: 521-523 LS - LY1 Internal Test Request: 21791/T/30807 Client Reference/s: Level 1 Report Date / Page: 2/10/2024 Page 2 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number Calibration Last Updated Nominated Calibration Layer Depth (mm)	- - -	Material Source Material Type	- - -
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LOT TEST RESULT SUMMARY



Tests in Lot = 2	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	103.7	108.6	106.2	3.465
Dry Density Ratio (%)	98.1	99.5	98.8	0.990

Lot Number:	521-523 LS - LY1
Mean Moisture Ratio (%):	106.2
Mean Density Ratio (%):	98.8

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73788-1
Client Address: PO BOX 197, Wynnnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: 520 to 523 LY4
Location: Darwin	Internal Test Request: 21791/T/30843
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 3/10/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/169348	21791/S/169349	21791/S/169350	
ID / Client ID	-	-	-	
Lot Number	520 to 523 LY4	520 to 523 LY4	520 to 523 LY4	
Date / Time Tested	26/09/2024 11:45	26/09/2024 12:00	26/09/2024 12:20	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	14452.385	14432.930	14414.255	
N:	21079.615	21079.391	21067.345	
RL: (m)	21.469	21.323	21.022	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	12 / 13	6 / 7	8 / 8	
MDR Sample Number	21791/S/169348	21791/S/169349	21791/S/169350	
MDR Sample Date / Update	26/09/2024	26/09/2024	26/09/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	15.9	10.5	13.2	
Optimum Moisture Content (%)	12.5	11.0	12.0	
Variation from OMC (%)	3.5% Wetter than OMC	0.5% Drier than OMC	1.5% Wetter than OMC	
Moisture Ratio (%)	126.0	97.0	112.0	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.22	2.22	2.20	
Field Dry Density (t/m ³)	1.91	2.01	1.95	
Maximum Dry Density (t/m ³)	1.94	2.02	2.02	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	98.5	99.5	96.5	

Remarks

<div style="text-align: center;">Accredited for compliance with ISO/IEC 17025 – Testing</div>  <p>Accreditation Number: 1986 Corporate Site Number: 21791</p>	 Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
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LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

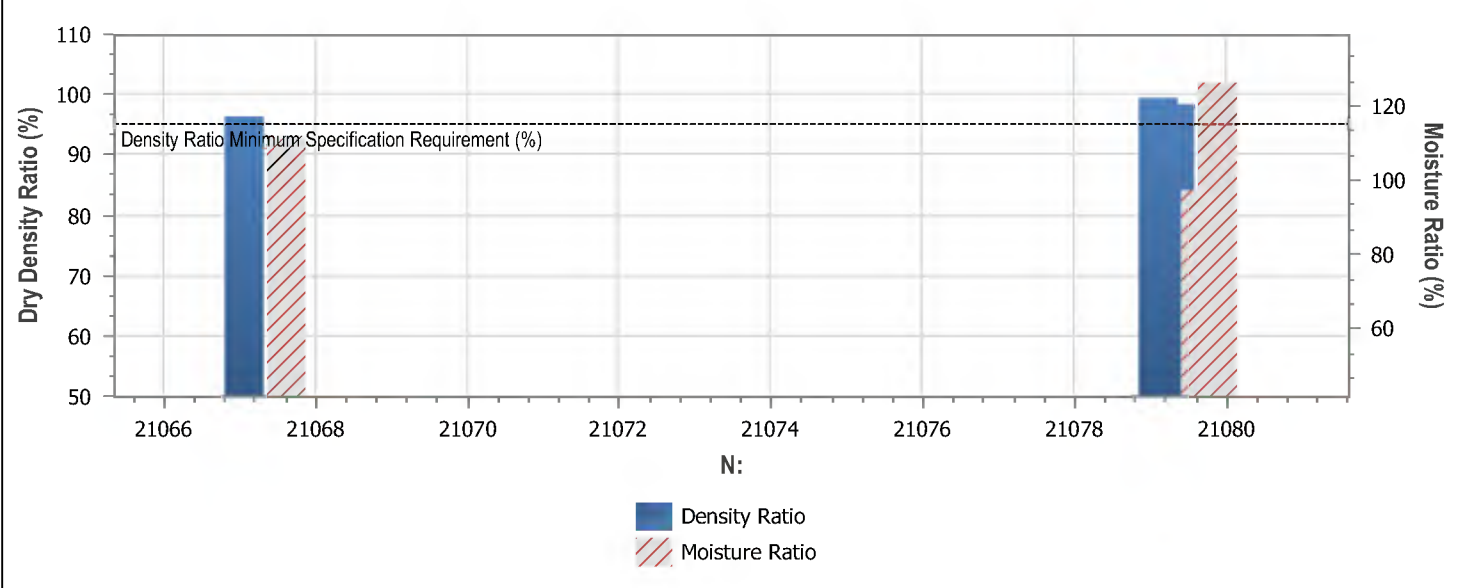
Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73788-1 Project Number: 21791/P/1241 Lot Number: 520 to 523 LY4 Internal Test Request: 21791/T/30843 Client Reference/s: Level 1 Report Date / Page: 3/10/2024 Page 2 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number Calibration Last Updated Nominated Calibration Layer Depth (mm)	- - -	Material Source Material Type	- -
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LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	97.2	126.2	111.8	14.500
Dry Density Ratio (%)	96.3	99.4	98.0	1.572

Lot Number:	520 to 523 LY4
Mean Moisture Ratio (%):	111.8
Mean Density Ratio (%):	98.0

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/73789-1
Client Address: PO BOX 197, Wynnnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: 513 to 514 LY 2
Location: Darwin	Internal Test Request: 21791/T/30853
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 3/10/2024 Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/169379		
ID / Client ID	-		
Lot Number	513 to 514 LY 2		
Date / Time Tested	27/09/2024 09:15		
Material Source	Imported Fill		
Material Type	General Fill		
Sampling Method	AS1289.1.2.1 Cl 6.4b		
Depths: Test / Nom / Actual (mm)	175 / 200 / 200		
Standard or Modified	Modified		
Stabilised Material Curing Time	-		
E:	14399.188		
N:	21115.590		
RL: (m)	20.970		
Test Fraction (mm)	< 19.0 mm		
Sample Oversize Wet / Dry (%)	11 / 12		
MDR Sample Number	21791/S/169379		
MDR Sample Date / Update	27/09/2024		
Assigned MDR (Yes / No)	No		
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	12.2		
Optimum Moisture Content (%)	11.0		
Variation from OMC (%)	1.0% Wetter than OMC		
Moisture Ratio (%)	109.0		
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.19		
Field Dry Density (t/m ³)	1.96		
Maximum Dry Density (t/m ³)	1.99		
Dry Density Ratio Required (%)	95		
Dry Density Ratio (%)	98.0		

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRep Rev 1
Accreditation Number: 1986 Corporate Site Number: 21791	



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnun Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73790-1 Project Number: 21791/P/1241 Lot Number: 511 to 512 LY 2 Internal Test Request: 21791/T/30853 Client Reference/s: Level 1 Report Date / Page: 3/10/2024 Page 1 of 1
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/169380		
ID / Client ID	-		
Lot Number	511 to 512 LY 2		
Date / Time Tested	27/09/2024 09:30		
Material Source	Imported Fill		
Material Type	General Fill		
Sampling Method	AS1289.1.2.1 Cl 6.4b		
Depths: Test / Nom / Actual (mm)	175 / 200 / 200		
Standard or Modified	Modified		
Stabilised Material Curing Time	-		
E:	14422.403		
N:	21156.945		
RL: (m)	22.075		
Test Fraction (mm)	< 19.0 mm		
Sample Oversize Wet / Dry (%)	11 / 11		
MDR Sample Number	21791/S/169380		
MDR Sample Date / Update	27/09/2024		
Assigned MDR (Yes / No)	No		
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	12.0		
Optimum Moisture Content (%)	11.0		
Variation from OMC (%)	1.0% Wetter than OMC		
Moisture Ratio (%)	110.0		
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.27		
Field Dry Density (t/m ³)	2.03		
Maximum Dry Density (t/m ³)	2.01		
Dry Density Ratio Required (%)	95		
Dry Density Ratio (%)	101.0		

Remarks

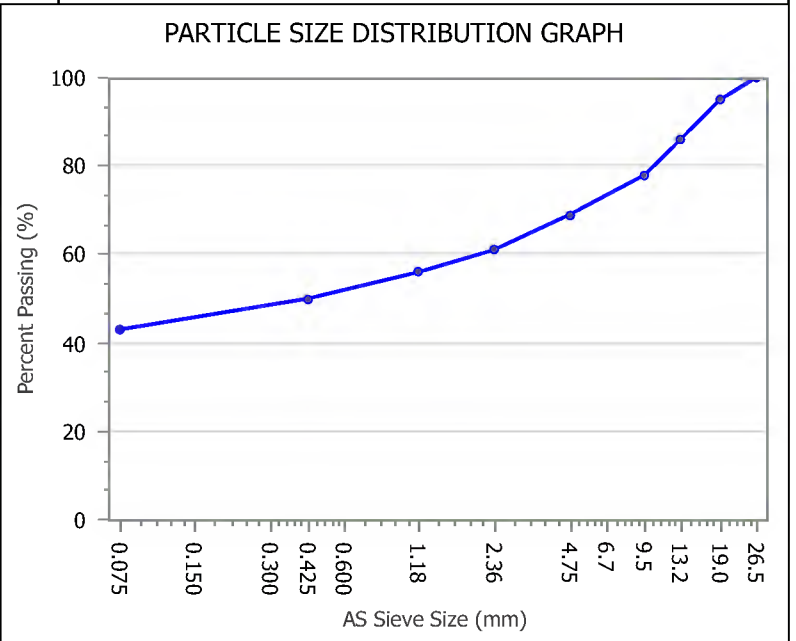
<div style="text-align: center;">Accredited for compliance with ISO/IEC 17025 – Testing</div>  <p>Accreditation Number: 1986 Corporate Site Number: 21791</p>	 Approved Signatory: Zack Rayner Form ID: W27ASRep Rev 1
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QUALITY OF MATERIALS REPORT

Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73951-1 Project Number: 21791/P/1241 Lot Number: On site Stockpile Internal Test Request: 21791/T/30902 Client Reference/s: Level 1 Report Date / Page: 10/10/2024 Page 1 of 1
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Test Procedures AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.3.1 Sample Number 21791/S/169560 Sampling Method AS1289.1.2.1 CI 6.4a Date Sampled 1/10/2024 Sampled By Dilush Anthonige Date Tested 4/10/2024 Drying Methods PSD: / ATT:Air Dried Atterberg Preparation Dry Sieved	Stockpile 1 Nrth Side Of the Pit Material Source Imported Fill Material Type General Fill Material Description General Fill
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AS Sieve (mm)	Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)
26.5		100	
19.0		95	
13.2		86	
9.5		78	
4.75		69	
2.36		61	
1.18		56	
0.425		50	
0.075		43	



Test Result	Specification Minimum (%)	Result	Specification Maximum (%)	Test Result	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)		40		0.075/0.425 Fines Ratio		0.86	
Plastic Limit (%)		28		PI x 0.425 Ratio (%)		597.0	
Plastic Index (%)		12		LS x 0.425 Ratio (%)		273.6	
Linear Shrinkage (%)		5.5		Particle Size Dist. Moisture Content (%)		9.3	
Shrinkage Observations	N/A						

Remarks

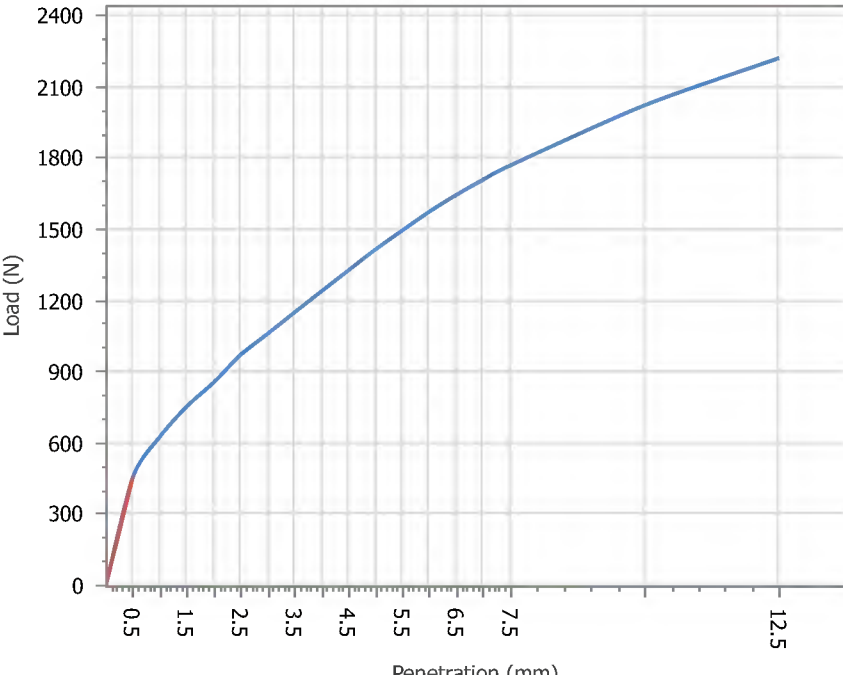
	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Sunil Sukhdeo Form ID: W85MCRep Rev 2

CALIFORNIA BEARING RATIO REPORT



Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/73953-1 Project Number: 21791/P/1241 Lot Number: On site Stockpile Internal Test Request: 21791/T/30902 Client Reference/s: Level 1 Report Date / Page: 10/10/2024 Page 1 of 1
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Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/169560 Sampling Method AS1289.1.2.1 CI 6.4a Date Sampled 1/10/2024 Sampled By Dilush Anthonige Date Tested 8/10/2024 Material Source Imported Fill Material Type General Fill Client Reference -	Stockpile 1 Nrth Side Of the Pit Prep Material > 53mm (%) - Material Limit Start - Material Limit End - Compactive Effort Modified

Material Description General Fill

Maximum Dry Density (t/m³): 1.84 Optimum Moisture Content (%): 10.0 Field Moisture Content (%): 9.3 Sample Percent Oversize (%): 5.0 Oversize Included / Excluded Excluded Target Density Ratio (%): 95 Target Moisture Ratio (%): 100 Placement Dry Density (t/m³): 1.74 Placement Dry Density Ratio (%): 95.0 Placement Moisture Content (%): 10.3 Placement Moisture Ratio (%): 101.0 Test Condition / Soaking Period: Soaked / 4 Days CBR Surcharge (kg) 4.5 Dry Density After Soak (t/m³): 1.70 Total Curing Time (hrs) 24 Liquid Limit Method Estimation Moisture (top 30mm) After Soak (%): 14.7 Moisture (remainder) After Soak (%): 15.0 CBR Swell (%): 3.0 Minimum CBR Specification (%): - CBR Value @ 2.5mm (%): 7	<h3>CBR PENETRATION PLOT</h3>  <table border="1" style="display: none;"> <caption>CBR Penetration Plot Data Points (Approximate)</caption> <thead> <tr> <th>Penetration (mm)</th> <th>Load (N)</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>0.5</td><td>450</td></tr> <tr><td>1.5</td><td>750</td></tr> <tr><td>2.5</td><td>1050</td></tr> <tr><td>3.5</td><td>1350</td></tr> <tr><td>4.5</td><td>1650</td></tr> <tr><td>5.5</td><td>1950</td></tr> <tr><td>6.5</td><td>2100</td></tr> <tr><td>7.5</td><td>2200</td></tr> <tr><td>12.5</td><td>2350</td></tr> </tbody> </table>	Penetration (mm)	Load (N)	0	0	0.5	450	1.5	750	2.5	1050	3.5	1350	4.5	1650	5.5	1950	6.5	2100	7.5	2200	12.5	2350
Penetration (mm)	Load (N)																						
0	0																						
0.5	450																						
1.5	750																						
2.5	1050																						
3.5	1350																						
4.5	1650																						
5.5	1950																						
6.5	2100																						
7.5	2200																						
12.5	2350																						

Remarks

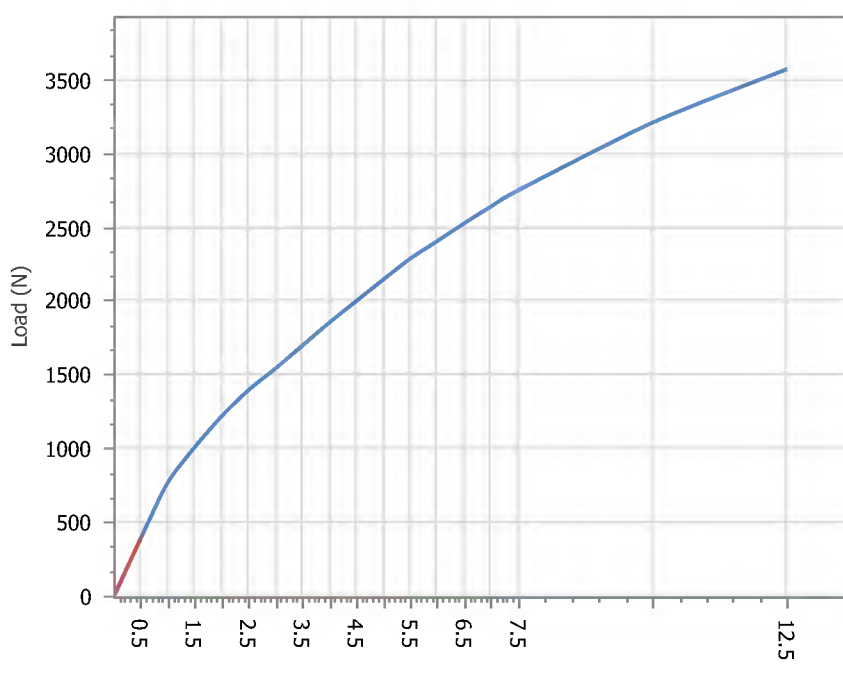
	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Sunil Sukhdeo Form ID: W2ASRep Rev 3	

CALIFORNIA BEARING RATIO REPORT



Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnum Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/74190-1 Project Number: 21791/P/1241 Lot Number: Lot 529 - 530 - LY1 Internal Test Request: 21791/T/30674 Client Reference/s: Level 1 Report Date / Page: 19/10/2024 Page 1 of 1
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Test Procedures AS1289.6.1.1, AS1289.5.2.1, AS1289.2.1.1	
Sample Number 21791/S/168647 Sampling Method AS1289.1.2.1 CI 6.4b Date Sampled 10/09/2024 Sampled By Dilush Anthonige Date Tested 5/10/2024 Material Source Imported Fill Material Type General Fill Client Reference -	E: 14439.873 N: 20983.477 RL: (m) 19.782 Prep Material > 53mm (%) - Material Limit Start - Material Limit End - Compactive Effort Modified

Material Description General Fill

Maximum Dry Density (t/m³): 2.04 Optimum Moisture Content (%): 9.5 Field Moisture Content (%): 12.9 Sample Percent Oversize (%): 16.0 Oversize Included / Excluded Excluded Target Density Ratio (%): 95 Target Moisture Ratio (%): 100 Placement Dry Density (t/m³): 1.94 Placement Dry Density Ratio (%): 95.5 Placement Moisture Content (%): 9.3 Placement Moisture Ratio (%): 97.0 Test Condition / Soaking Period: Soaked / 4 Days CBR Surcharge (kg) 4.5 Dry Density After Soak (t/m³): 1.90 Total Curing Time (hrs) 100 Liquid Limit Method Estimation Moisture (top 30mm) After Soak (%): 14.3 Moisture (remainder) After Soak (%): 14.2 CBR Swell (%): 2.0 Minimum CBR Specification (%): - CBR Value @ 5.0mm (%): 11	<h3>CBR PENETRATION PLOT</h3> 
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Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W2ASRep Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/74283-1
Client Address: PO BOX 197, Wynnnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 515 to 517 - LY 6
Location: Darwin	Internal Test Request: 21791/T/31038
Component: Level 1 Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 21/10/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/170053	21791/S/170054	21791/S/170055	
ID / Client ID	-	-	-	
Lot Number	Lot 515 to 517 - LY 6	Lot 515 to 517 - LY 6	Lot 515 to 517 - LY 6	
Date / Time Tested	9/10/2024 09:00	9/10/2024 09:15	9/10/2024 09:25	
Material Source	Imported Fill	Imported Fill	Imported Fill	
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 / -	175 / 200 / -	
Standard or Modified	Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	-	
E:	144440.984	14430.569	14405.818	
N:	21098.642	21081.954	21077.411	
RL: (m)	21.530	24.579	21.109	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	5 / 5	6 / 7	13 / 14	
MDR Sample Number	21791/S/170053	21791/S/170054	21791/S/170055	
MDR Sample Date / Update	9/10/2024	9/10/2024	9/10/2024	
Assigned MDR (Yes / No)	No	No	No	
<i>Moisture Test Results:</i>				
Field Moisture Content (%)	14.1	16.5	14.7	
Optimum Moisture Content (%)	14.0	16.0	14.0	
Variation from OMC (%)	0.0% Drier than OMC	0.5% Wetter than OMC	1.0% Wetter than OMC	
Moisture Ratio (%)	99.5	102.0	106.5	
<i>Density Test Results:</i>				
Field Wet Density (t/m ³)	2.15	2.15	2.15	
Field Dry Density (t/m ³)	1.88	1.85	1.87	
Maximum Dry Density (t/m ³)	1.90	1.85	1.93	
Dry Density Ratio Required (%)	95	95	95	
Dry Density Ratio (%)	99.5	99.5	97.0	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

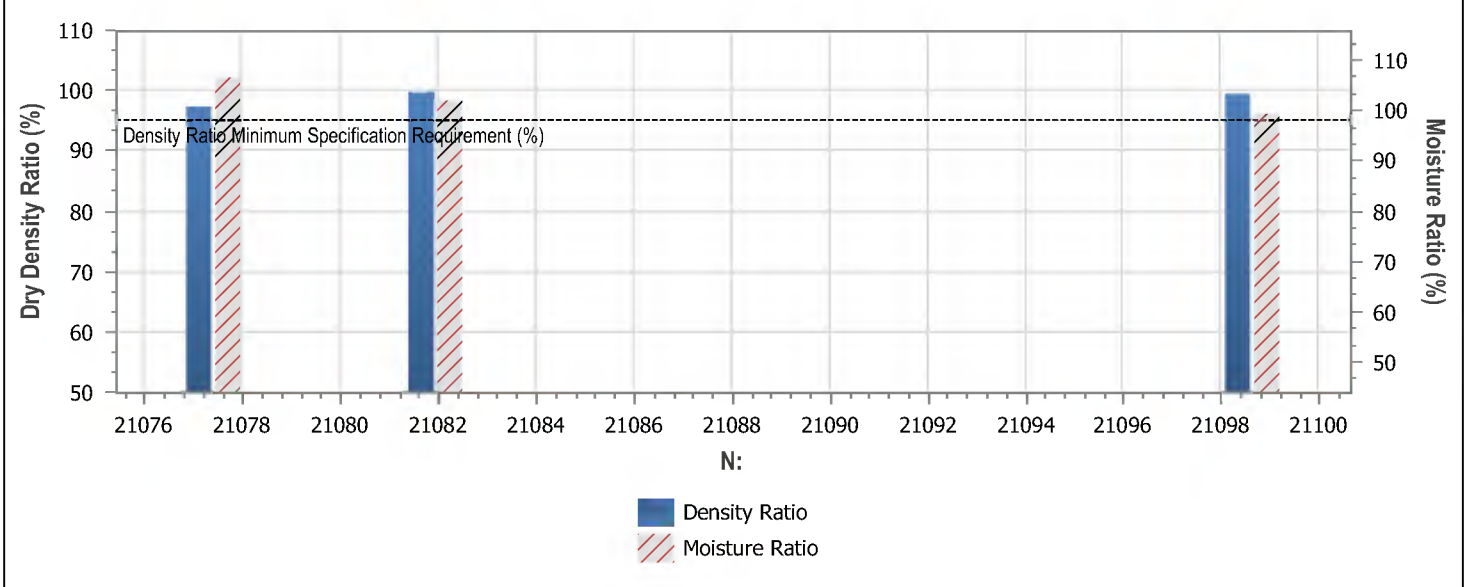
Client: BMD Urban Pty Ltd Client Address: PO BOX 197, Wynnunm Project: The Heights Durack - Stage 11 Location: Darwin Component: Level 1 Density Testing Area Description: The Heights - Stage 11	Report Number: 21791/R/74283-1 Project Number: 21791/P/1241 Lot Number: Lot 515 to 517 - LY 6 Internal Test Request: 21791/T/31038 Client Reference/s: Level 1 Report Date / Page: 21/10/2024 Page 2 of 2
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Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 3	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	99.3	106.5	102.6	3.646
Dry Density Ratio (%)	97.2	99.6	98.7	1.308

Lot Number:	Lot 515 to 517 - LY 6
Mean Moisture Ratio (%):	102.6
Mean Density Ratio (%):	98.7

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/74479-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 515-516 LY-7
Location: Darwin	Internal Test Request: 21791/T/31134
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 26/10/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/170523	21791/S/170524	
ID / Client ID	-	-	
Lot Number	Lot 515-516 LY-7	Lot 515-516 LY-7	
Date / Time Tested	16/10/2024 12:45	16/10/2024 12:50	
Material Source	Imported Fill	Imported Fill	
Material Type	General Fill	General Fill	
Sampling Method	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	
Standard or Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	
E:	1444.863	14434.020	
N:	21086.156	21078.857	
RL: (m)	22.041	21.927	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	5 / 5	9 / 10	
MDR Sample Number	21791/S/170523	21791/S/170524	
MDR Sample Date / Update	16/10/2024	16/10/2024	
Assigned MDR (Yes / No)	No	No	
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	15.2	13.7	
Optimum Moisture Content (%)	11.0	11.0	
Variation from OMC (%)	4.5% Wetter than OMC	2.5% Wetter than OMC	
Moisture Ratio (%)	140.5	124.5	
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.16	2.16	
Field Dry Density (t/m ³)	1.88	1.90	
Maximum Dry Density (t/m ³)	1.96	1.99	
Dry Density Ratio Required (%)	95	95	
Dry Density Ratio (%)	95.5	95.0	

Remarks

<p>Accredited for compliance with ISO/IEC 17025 – Testing</p>  <p>Accreditation Number: 1986 Corporate Site Number: 21791</p>	 <p>Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3</p>
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LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

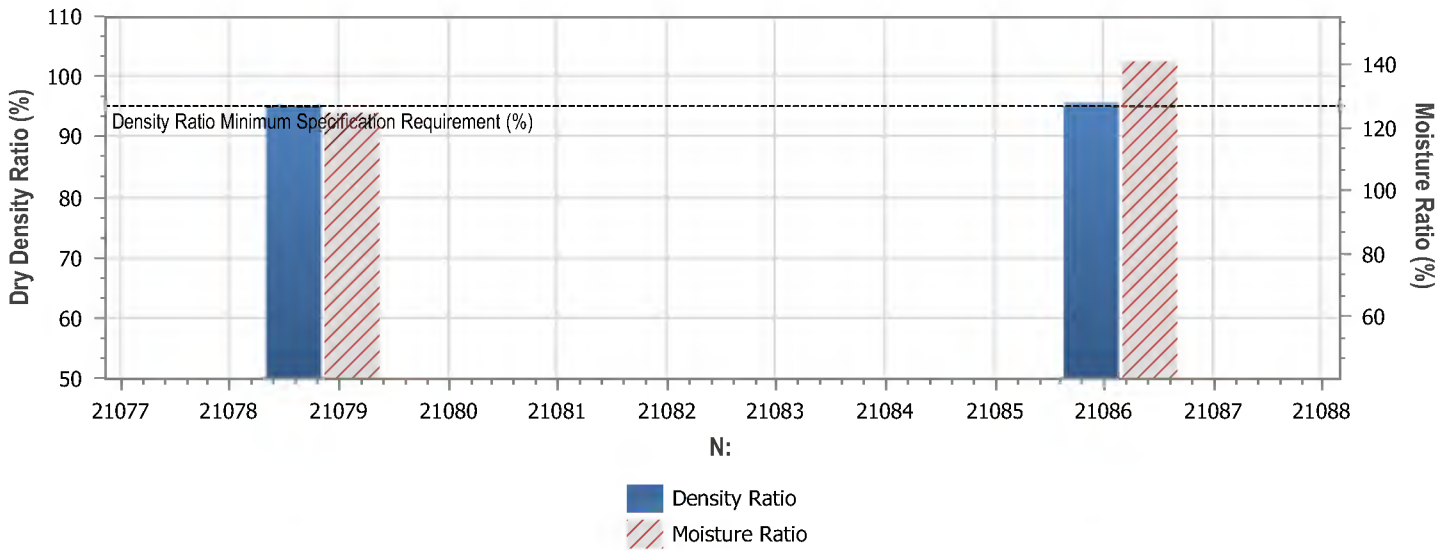
Client: BMD Urban Pty Ltd	Report Number: 21791/R/74479-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 515-516 LY-7
Location: Darwin	Internal Test Request: 21791/T/31134
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 26/10/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 2	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	124.5	140.7	132.6	11.455
Dry Density Ratio (%)	95.2	95.5	95.4	0.212

Lot Number:	Lot 515-516 LY-7
Mean Moisture Ratio (%):	132.6
Mean Density Ratio (%):	95.4

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/74487-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 515-517 LY-7
Location: Darwin	Internal Test Request: 21791/T/31134
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 26/10/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/170525	21791/S/170526	
ID / Client ID	-	-	
Lot Number	Lot 515-517 LY-7	Lot 515-517 LY-7	
Date / Time Tested	16/10/2024 13:15	16/10/2024 13:35	
Material Source	Imported Fill	Imported Fill	
Material Type	General Fill	General Fill	
Sampling Method	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	
Standard or Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	
E:	14429.079	14444.865	
N:	21088.268	21098.185	
RL: (m)	21.989	21.971	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	4 / 4	12 / 13	
MDR Sample Number	21791/S/170525	21791/S/170526	
MDR Sample Date / Update	16/10/2024	16/10/2024	
Assigned MDR (Yes / No)	No	No	
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	13.5	12.3	
Optimum Moisture Content (%)	12.0	10.0	
Variation from OMC (%)	1.5% Wetter than OMC	2.5% Wetter than OMC	
Moisture Ratio (%)	112.5	124.0	
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.17	2.17	
Field Dry Density (t/m ³)	1.91	1.93	
Maximum Dry Density (t/m ³)	2.03	2.00	
Dry Density Ratio Required (%)	95	95	
Dry Density Ratio (%)	94.0	96.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

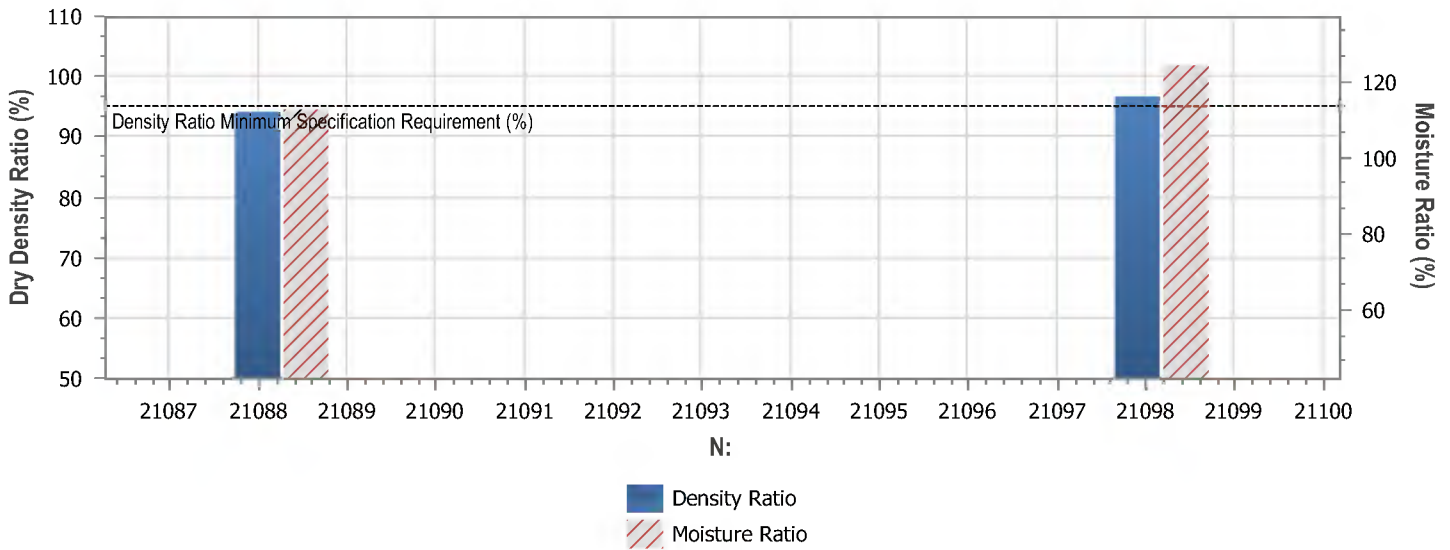
Client: BMD Urban Pty Ltd	Report Number: 21791/R/74487-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 515-517 LY-7
Location: Darwin	Internal Test Request: 21791/T/31134
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 26/10/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 2	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	112.5	124.2	118.4	8.273
Dry Density Ratio (%)	94.1	96.6	95.4	1.768

Lot Number:	Lot 515-517 LY-7
Mean Moisture Ratio (%):	118.4
Mean Density Ratio (%):	95.4

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/74488-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 513-514 LY-3
Location: Darwin	Internal Test Request: 21791/T/31134
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 26/10/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	21791/S/170527	21791/S/170528	
ID / Client ID	-	-	
Lot Number	Lot 513-514 LY-3	Lot 513-514 LY-3	
Date / Time Tested	16/10/2024 13:50	16/10/2024 14:00	
Material Source	Imported Fill	Imported Fill	
Material Type	General Fill	General Fill	
Sampling Method	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	
Standard or Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	
E:	14394.792	14410.853	
N:	21118.795	21133.953	
RL: (m)	21.218	21.930	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	10 / 11	0 / 0	
MDR Sample Number	21791/S/170527	21791/S/170528	
MDR Sample Date / Update	16/10/2024	16/10/2024	
Assigned MDR (Yes / No)	No	No	
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	14.9	16.4	
Optimum Moisture Content (%)	12.0	12.0	
Variation from OMC (%)	3.0% Wetter than OMC	4.5% Wetter than OMC	
Moisture Ratio (%)	125.0	135.5	
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.12	2.12	
Field Dry Density (t/m ³)	1.85	1.82	
Maximum Dry Density (t/m ³)	1.94	1.93	
Dry Density Ratio Required (%)	95	95	
Dry Density Ratio (%)	95.5	94.5	

Remarks

<p>Accredited for compliance with ISO/IEC 17025 – Testing</p>  <p>Accreditation Number: 1986 Corporate Site Number: 21791</p>	 <p>Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3</p>
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LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

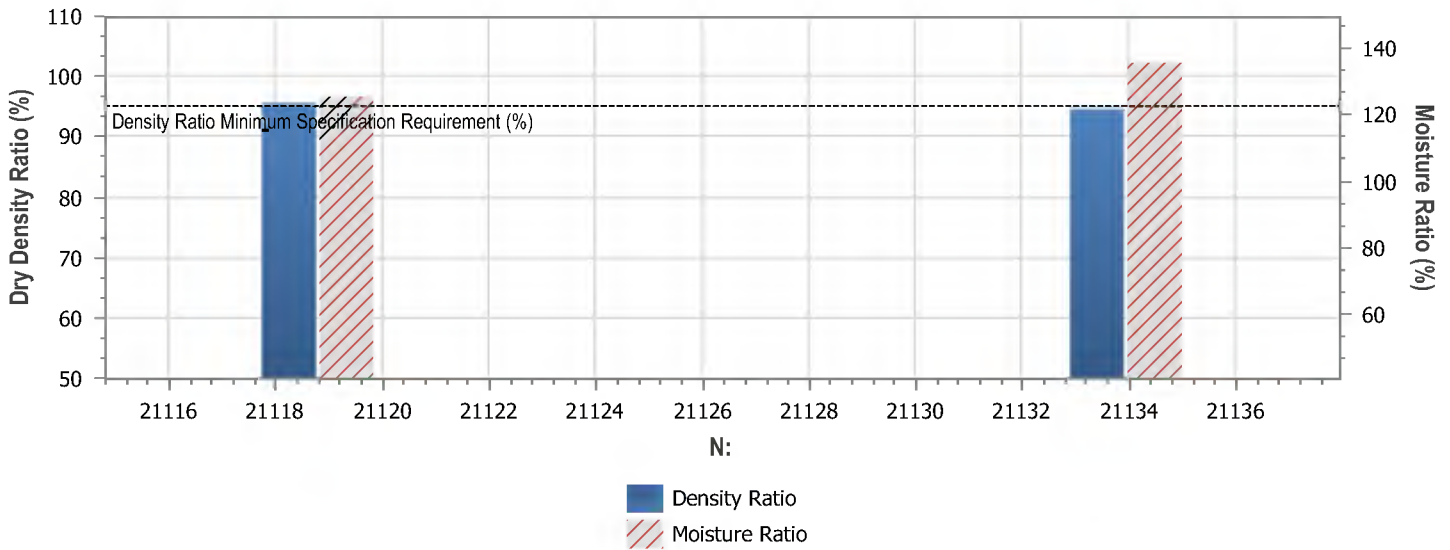
Client: BMD Urban Pty Ltd	Report Number: 21791/R/74488-1
Client Address: PO BOX 197, Wynnun	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 513-514 LY-3
Location: Darwin	Internal Test Request: 21791/T/31134
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 26/10/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 2	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	125.2	135.5	130.4	7.283
Dry Density Ratio (%)	94.5	95.5	95.0	0.707

Lot Number:	Lot 513-514 LY-3
Mean Moisture Ratio (%):	130.4
Mean Density Ratio (%):	95.0

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/74636-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 507 - 511 - Edge
Location: Darwin	Internal Test Request: 21791/T/31210
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 31/10/2024 Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	21791/S/170921		
ID / Client ID	-		
Lot Number	Lot 507 - 511 - Edge		
Date / Time Tested	17/10/2024 14:40		
Material Source	Imported Fill		
Material Type	General Fill		
Sampling Method	AS1289.1.2.1 Cl 6.4b		
Depths: Test / Nom / Actual (mm)	175 / 200 / -		
Standard or Modified	Modified		
Stabilised Material Curing Time	-		
E:	14460.032		
N:	21110.473		
RL: (m)	21.974		
Test Fraction (mm)	< 19.0 mm		
Sample Oversize Wet / Dry (%)	10 / 10		
MDR Sample Number	21791/S/170921		
MDR Sample Date / Update	17/10/2024		
Assigned MDR (Yes / No)	No		
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	12.3		
Optimum Moisture Content (%)	10.5		
Variation from OMC (%)	2.0% Wetter than OMC		
Moisture Ratio (%)	118.5		
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.23		
Field Dry Density (t/m ³)	1.99		
Maximum Dry Density (t/m ³)	2.06		
Dry Density Ratio Required (%)	95		
Dry Density Ratio (%)	96.5		

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRep Rev 1



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/74638-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 513-514 LY4
Location: Darwin	Internal Test Request: 21791/T/31221
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 31/10/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	21791/S/170959	21791/S/170960	
ID / Client ID	-	-	
Lot Number	Lot 513-514 LY4	Lot 513-514 LY4	
Date / Time Tested	21/10/2024 12:50	21/10/2024 13:10	
Material Source	Imported Fill	Imported Fill	
Material Type	General Fill	General Fill	
Sampling Method	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	
Standard or Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	
E:	14413.817	14398.464	
N:	21138.994	21126.414	
RL: (m)	21.981	21.731	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	6 / 7	7 / 8	
MDR Sample Number	21791/S/170959	21791/S/170960	
MDR Sample Date / Update	21/10/2024	21/10/2024	
Assigned MDR (Yes / No)	No	No	
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	11.5	11.0	
Optimum Moisture Content (%)	13.0	9.5	
Variation from OMC (%)	1.5% Drier than OMC	1.5% Wetter than OMC	
Moisture Ratio (%)	88.0	114.5	
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.22	2.19	
Field Dry Density (t/m ³)	1.99	1.97	
Maximum Dry Density (t/m ³)	2.09	2.08	
Dry Density Ratio Required (%)	95	95	
Dry Density Ratio (%)	95.0	95.0	

Remarks

<p>Accredited for compliance with ISO/IEC 17025 – Testing</p>  <p>Accreditation Number: 1986 Corporate Site Number: 21791</p>	 <p>Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3</p>
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LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

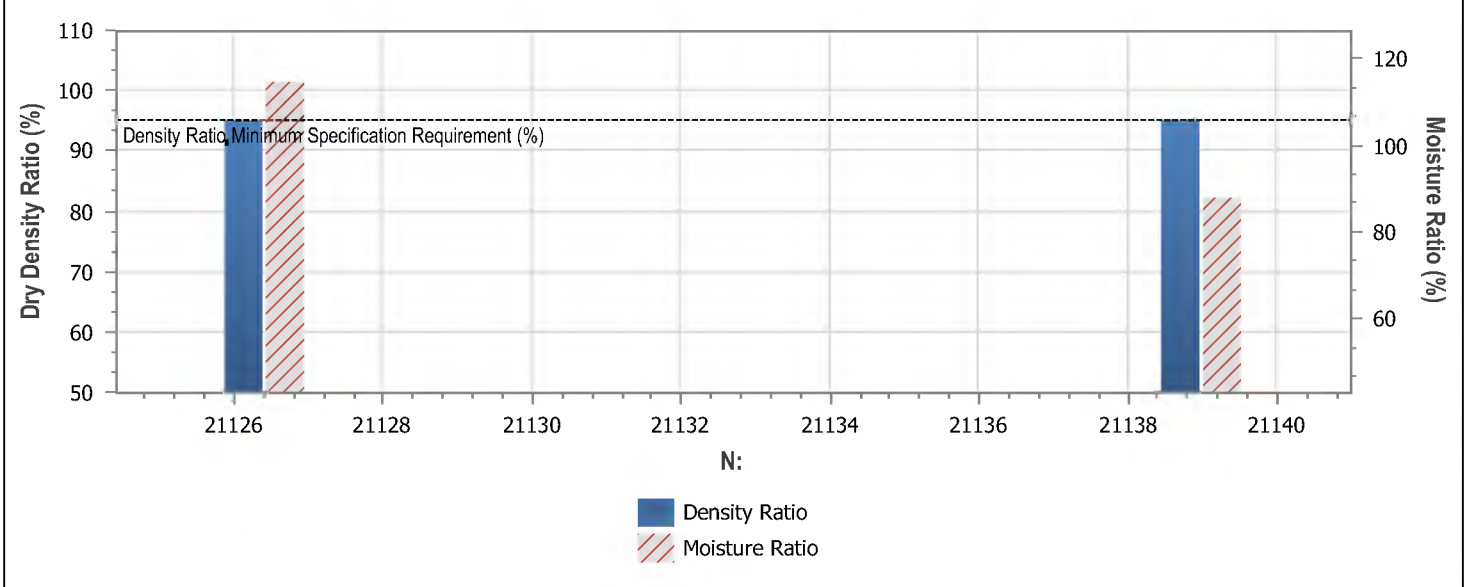
Client: BMD Urban Pty Ltd	Report Number: 21791/R/74638-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 513-514 LY4
Location: Darwin	Internal Test Request: 21791/T/31221
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 31/10/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 2	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	87.8	114.6	101.2	18.950
Dry Density Ratio (%)	94.9	95.2	95.1	0.212

Lot Number:	Lot 513-514 LY4
Mean Moisture Ratio (%):	101.2
Mean Density Ratio (%):	95.1

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

Client: BMD Urban Pty Ltd	Report Number: 21791/R/74682-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 513-514 LY3
Location: Darwin	Internal Test Request: 21791/T/31221
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 2/11/2024 Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	21791/S/170961	21791/S/170962	
ID / Client ID	-	-	
Lot Number	Lot 513-514 LY3	Lot 513-514 LY3	
Date / Time Tested	21/10/2024 13:20	21/10/2024 13:30	
Material Source	Imported Fill	Imported Fill	
Material Type	General Fill	General Fill	
Sampling Method	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	
Standard or Modified	Modified	Modified	
Stabilised Material Curing Time	-	-	
E:	14386.843	14400.100	
N:	21128.813	21142.547	
RL: (m)	21.278	21.634	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet / Dry (%)	11 / 12	3 / 4	
MDR Sample Number	21791/S/170961	21791/S/170962	
MDR Sample Date / Update	21/10/2024	21/10/2024	
Assigned MDR (Yes / No)	No	No	
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	10.4	11.4	
Optimum Moisture Content (%)	9.0	10.5	
Variation from OMC (%)	1.0% Wetter than OMC	1.0% Wetter than OMC	
Moisture Ratio (%)	113.0	108.5	
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.19	2.19	
Field Dry Density (t/m ³)	1.98	1.97	
Maximum Dry Density (t/m ³)	2.08	2.06	
Dry Density Ratio Required (%)	95	95	
Dry Density Ratio (%)	95.0	95.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3
Accreditation Number: 1986 Corporate Site Number: 21791	

LOT REPORT - DRY DENSITY RATIO / MOISTURE RATIO

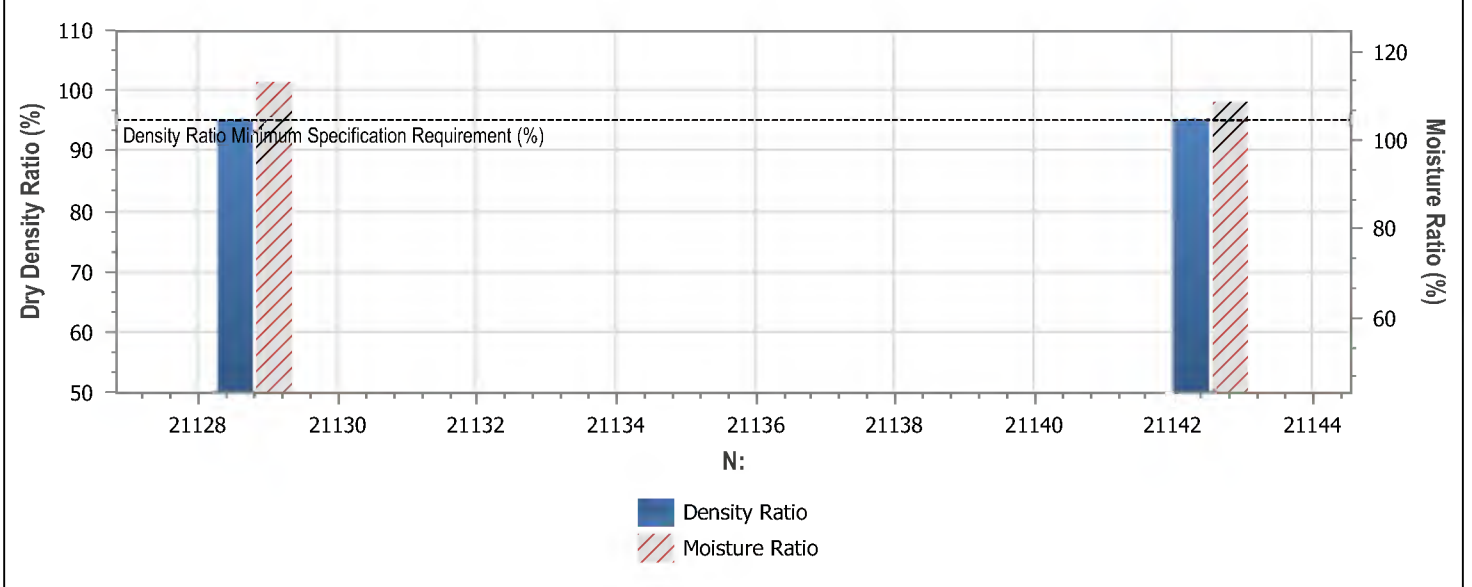
Client: BMD Urban Pty Ltd	Report Number: 21791/R/74682-1
Client Address: PO BOX 197, Wynnum	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 513-514 LY3
Location: Darwin	Internal Test Request: 21791/T/31221
Component: Density Testing	Client Reference/s: Level 1
Area Description: The Heights - Stage 11	Report Date / Page: 2/11/2024 Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		



LOT TEST RESULT SUMMARY



Tests in Lot = 2	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	108.6	113.0	110.8	3.111
Dry Density Ratio (%)	95.2	95.3	95.3	0.071

Lot Number:	Lot 513-514 LY3
Mean Moisture Ratio (%):	110.8
Mean Density Ratio (%):	95.3

Remarks

	Accredited for compliance with ISO/IEC 17025 – Testing	
Accreditation Number: 1986 Corporate Site Number: 21791		Approved Signatory: Zack Rayner Form ID: W27ASRepSum Rev 3



DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client: BMD Urban Pty Ltd	Report Number: 21791/R/75373-1
Client Address: PO BOX 197, Wynnunm	Project Number: 21791/P/1241
Project: The Heights Durack - Stage 11	Lot Number: Lot 528 LY5
Location: Darwin	Internal Test Request: 21791/T/31554
Component: Level -1 Testing	Client Reference/s: Level 1
Area Description: Stage-11	Report Date / Page: 22/11/2024 Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.2.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	21791/S/172893		
ID / Client ID	-		
Lot Number	Lot 528 LY5		
Date / Time Tested	12/11/2024 09:00		
Material Source	Imported Fill		
Material Type	General Fill		
Sampling Method	AS1289.1.2.1 Cl 6.4b		
Depths: Test / Nom / Actual (mm)	175 / - / 200		
Standard or Modified	Modified		
Stabilised Material Curing Time	-		
E:	14444.190		
N:	21007.190		
RL: (m)	20.908		
Test Fraction (mm)	< 19.0 mm		
Sample Oversize Wet / Dry (%)	7 / 8		
MDR Sample Number	21791/S/172893		
MDR Sample Date / Update	12/11/2024		
Assigned MDR (Yes / No)	No		
<i>Moisture Test Results:</i>			
Field Moisture Content (%)	10.1		
Optimum Moisture Content (%)	9.0		
Variation from OMC (%)	1.0% Wetter than OMC		
Moisture Ratio (%)	112.0		
<i>Density Test Results:</i>			
Field Wet Density (t/m ³)	2.24		
Field Dry Density (t/m ³)	2.04		
Maximum Dry Density (t/m ³)	2.12		
Dry Density Ratio Required (%)	95		
Dry Density Ratio (%)	96.0		

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing		
	Accreditation Number: 1986 Corporate Site Number: 21791	Approved Signatory: Sunil Sukhdeo Form ID: W27ASRep Rev 1



21791/P/303 Level 1

Chris White
BMD Urban Pty Ltd

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Document History

Effective Date	Description of Revision	Prepared By	Reviewed By	Approved By
15/04/19	Issued to Client	C.White	P.Gode	P.Gode

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Introduction

Construction Sciences is the largest private provider of construction materials testing services across Australia. We have a total staff of over 600 staff in 48 permanent offices/laboratories.

We have provided QA testing services to some of the largest road and mining infrastructure projects in these states, as well as overseas.

Over the last 3 to 4 years, Construction Sciences has established more site laboratories for road, rail, mining, and other large infrastructure projects than any other company.

We benefit our clients with the following clear differentiators;

Staff Mobilisation: Construction Sciences' geographic expansion and mobility allow for teams to be available when required, and currently we have the lion's share of major projects in Australia.

Quality Management: Construction Sciences' purpose-built software, COMPLY provides our clients with confidence, by knowing project data is securely stored. COMPLY has a built-in secure audit trail and a fully tracked Quality system. We are also ISO9001 compliant and certified.

Client Relationships: We listen to your needs and respond with innovative solutions that are tailored for your business. We believe in building relationships with our staff and local community.

Safety: At Construction Sciences we embrace a 'safety' culture and it is a key consideration with every project. Currently we are over 2 years LTI (lost time injury) free.

Construction Sciences Pty Ltd was commissioned by **BMD Urban Pty Ltd** to provide Level 1 inspection and testing services for the placement of fill at the residential development:-

PROJECT: The Heights Stage 11

ADDRESS: The Heights, Stage 11 Durack.

The earthworks were carried out from 12/06/2016 to 29/10/2016

Specification Requirements

Filling was carried out in accordance with AS3798-2007 '*Guidelines on earthworks for commercial and residential developments*' and with the project specification prepared for the project.

The specification requirements were that all fill was to be placed and compacted in layers to a density ratio of not less than 95% of the maximum dry density as determined by AS1289.5.2.1 (modified compaction).

Site Works

The area to be filled was stripped and proof rolled in accordance with the specification requirements. The fill material generally comprised of sandy clay.

Compaction Control Testing

Compaction control tests were carried out at regular intervals throughout the placement of fill in accordance with the minimum test frequency recommendations included in AS3798-2007 '*Guidelines on earthworks for commercial and residential developments*'. All test results are included in the Appendix B. A summary of the test results is included as Table 1. A total of 68 field density tests were carried out throughout the earthworks. The average density ratio was 97.0 % with a standard deviation of **5.009** %.

The location of all tests is shown on the attached Site Map in Appendix C.

Conclusion

It is considered that the placement of fill at, The Heights, Stage 11 Durack. was carried out in a controlled manner and the fill was compacted to a dry density ratio not less than the specified requirement. It is concluded that the fill may be deemed to be '*controlled fill*' in accordance with AS2870 – 2011 '*Residential Slabs & Footings*'.



Chris White

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CONSTRUCTION SCIENCES



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Table 1-1 Summary of field density test results - The Heights Stage 11

Sample No.	Date	Lot	Moisture Ratio	Density ratio
21791/S/39787	16/06/2016	445	94.0	97.0
21791/S/39788	16/06/2016	449	104.0	94.5
21791/S/39954	22/06/2016	Lot 426	125.5	97.0
21791/S/39955	22/06/2016	Lot 425	85.0	96.0
21791/S/39956	22/06/2016	Road 23	109.0	96.0
21791/S/39973	22/06/2016	LOT 450	138.5	92.5
21791/S/39974	22/06/2016	LOT453	143.0	92.5
21791/S/39975	22/06/2016	LOT 454	121.5	97.5
21791/S/39976	22/06/2016	LOT 456	111.5	93.5
21791/S/39977	22/06/2016	LOT 451	78.0	95.5
21791/S/40094	24/06/2016		124.0	95.5
21791/S/40095	24/06/2016	424	112.0	95.0
21791/S/40165	27/06/2016	425	84.0	99.5
21791/S/40166	27/06/2016	448/L3	153.5	93.0
21791/S/40240	28/06/2016	456/L3	107.5	98.5
21791/S/40241	28/06/2016	440	107.0	100.0
21791/S/40295	29/06/2016	437	114.5	100.5
21791/S/40296	29/06/2016	437	137.0	99.0
21791/S/40054	23/06/2016	428	120.0	91.5
21791/S/40055	23/06/2016	450	81.0	102.5
21791/S/40360	30/06/2016	454	87.5	100.5
21791/S/40361	30/06/2016	443	91.0	99.0
21791/S/40401	1/07/2016	425/L3	117.5	104.0
21791/S/40239	28/06/2016	453	93.0	98.0
21791/S/40540	5/07/2016	457	99.5	99.0

21791/S/40541	5/07/2016	427	93.5	102.0
21791/S/40542	5/07/2016	430	119.0	95.0
21791/S/41025	13/07/2016	430	104.0	98.0
21791/S/41026	13/07/2016	345'	326.5	66.5
21791/S/41027	13/07/2016	Lot 431	82.5	98.0
21791/S/41968	3/08/2016	Lot 431	136.0	84.5
21791/S/41969	3/08/2016	424	96.0	96.0
21791/S/42500	17/08/2016	436(E)	63.0	98.5
21791/S/42501	17/08/2016	438	95.0	95.0
21791/S/42502	17/08/2016	Pit 136/1-132/2	107.5	96.0
21791/S/42503	17/08/2016	346 D	102.5	99.0
21791/S/42695	19/08/2016	436C	137.5	95.5
21791/S/42705	20/08/2016	436B	138.0	92.5
21791/S/42706	20/08/2016	426	102.0	101.5
21791/S/42772	23/08/2016	436B	116.0	97.0
21791/S/42676	18/08/2016	436D	118.0	97.5
21791/S/42677	18/08/2016	438	92.5	95.0
21791/S/42678	18/08/2016	129/1	113.5	87.5
21791/S/42845	24/08/2016	129/1	111.5	92.0
21791/S/42846	24/08/2016	436E	107.0	100.5
21791/S/42847	25/08/2016	434	178.0	92.5
21791/S/42848	25/08/2016	432	86.5	98.0
21791/S/42843	24/08/2016	433	127.5	93.0
21791/S/42844	24/08/2016	435	112.5	95.5
21791/S/42946	26/08/2016	129/2	103.0	97.0
21791/S/42947	29/08/2016	129/3	108.5	94.5

21791/S/42948	29/08/2016	129/3-4	79.5	99.5
21791/S/43062	29/08/2016	129/3-4	89.0	97.0
21791/S/43063	29/08/2016	129/3-4	74.5	102.0
21791/S/43064	29/08/2016	436	77.5	96.5
21791/S/43065	29/08/2016	436E	70.0	101.5
21791/S/43066	29/08/2016	436	87.0	96.0
21791/S/43094	30/08/2016		103.5	95.0
21791/S/43256	2/09/2016		87.0	95.5
21791/S/43257	2/09/2016	436D	96.0	97.5
21791/S/43350	5/09/2016	436B	100.0	97.0
21791/S/43351	5/09/2016	433	98.0	98.0
21791/S/43352	5/09/2016	430	72.5	100.0
21791/S/43405	6/09/2016	439	74.0	98.5
21791/S/43406	6/09/2016		81.5	95.0
21791/S/43702	10/09/2016	427	105.0	95.0
21791/S/43477	8/09/2016	430	99.0	100.5

No. of tests:	68	Mean:	97.0 %	Standard Dev:	5.009 %
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Notes:

1. Level of test positions determined relative to on site benchmark.
2. Standard laboratory compaction used, AS1289.5.2.1.

Appendix A – Test Certificates

Appendix B – Lot Map



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