

Cardno Bowler Level one Report

Vantage Stage 7
(Lot 409)



Prepared for BMD
25/7/2013

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Document Information

Prepared for

BMD

Project Name

Vantage Stage 7 (Lot 409)

File Reference



5529/P/83

Job Reference

Date

25/7/2013

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1	12/7/2013		MP		DC	

Version	Reason for Issue	Approved for Release By	Approved (Signature)	Approved Release Date

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1. INTRODUCTION

Cardno Bowler Pty Ltd was commissioned by BMD to carry out Level 1 supervision of the placement of fill for Vantage stage 7.

2. INSPECTIONS / COMPACTION CONTROL TESTING

Prior to filling operations on Lot 409, inspections and compaction tests were carried out on areas of sub-grade soils. The inspections confirmed that vegetation had been stripped from the fill area prior to filling.

Compaction control tests, meeting the project specification were taken. These tests were carried out at regular intervals throughout the placement of fill in accordance with AS3798-2007 'Guidelines on Earthworks for commercial and residential developments'. Equipment used over the period of filling included scrapers, excavators, backhoes, graders, water trucks, sheepsfoot rollers tip trucks etc. The fill was placed at the front of the block and varied in depth. The test results attached are relevant to lot 409 with compaction.

The placement of fill for the proposed subdivision was carried out under level 1 arrangements, in a controlled manner and compacted to a density ratio of not less than the specified requirements. Given this, the fill may be deemed to be 'Controlled Fill' in accordance with AS2870-2007 'Residential Slabs & Footings'.

For and on behalf of Cardno Bowler,



Michael Preston

Laboratory Manager

Gladstone.





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DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client:	BMD Urban	Report Number:	5529/R/2116-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	
Location:	Brindabella way gladstone	Report Date:	29/11/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/6939	5529/S/6940	5529/S/6941	5529/S/6942
ID / Client ID	#15	#16	#17	#18
Lot Number	-	-	-	-
Date / Time Tested	21/11/2012	21/11/2012	21/11/2012	21/11/2012
Material Source	Insitu	Insitu	Insitu	Insitu
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1
Test / Layer Depth (mm)	150 / -	150 / -	150 / -	150 / -
Standard or Modified	Standard	Standard	Standard	Standard
	Location as per Site Plan	Location as per Site Plan	Location as per Site Plan	Location as per Site Plan
	RL:45.75	RL:45.52	RL:45.64	RL44.08
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet (%)	0	0	0	0
Sample Oversize Dry (%)	0	0	0	0
MDR Sample Number	5529/S/6939	5529/S/6940	5529/S/6941	5529/S/6942
MDR Sample Date / Update	21/11/2012	21/11/2012	21/11/2012	21/11/2012
Assigned MDR (Yes / No)	No	No	No	No
Moisture Test Results:				
Field Moisture Content (%)	8.2	8.0	7.6	8.5
Optimum Moisture Content (%)	11.5	11.5	14.5	12.0
Variation from OMC (%)	3.0% Dryer than OMC	3.5% Dryer than OMC	7.0% Dryer than OMC	3.5% Dryer than OMC
Moisture Ratio (%)	72.0	68.5	51.5	72.0
Density Test Results:				
Field Dry Density (t/m³)	2.06	2.04	1.97	1.86
Maximum Dry Density (t/m³)	2.01	1.97	2.02	1.91
Dry Density Ratio Required (%)	-	-	-	-
Dry Density Ratio (%)	102.5	103.5	97.5	97.0

Remarks

 <p>The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards</p> <p>Accredited for compliance with ISO/IEC 17025</p> <p>Laboratory Accreditation Number: 5529</p>	 <p>Approved Signatory: Michael Preston Form ID: W27ASRep Rev 1</p>
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DRY DENSITY RATIO / MOISTURE RATIO REPORT

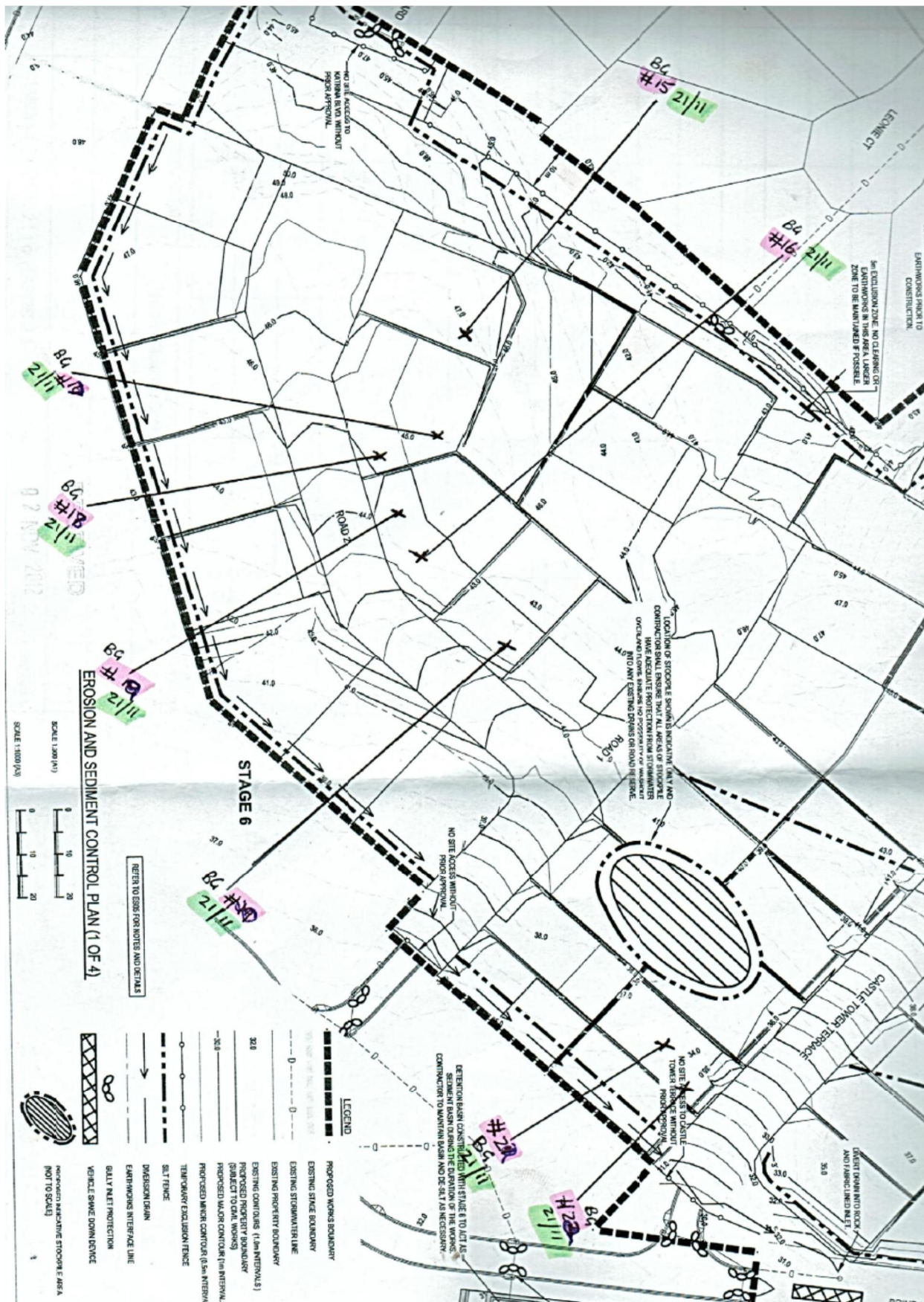
Client:	BMD Urban	Report Number:	5529/R/2116-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	
Location:	Brindabella way gladstone	Report Date:	29/11/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/6943	5529/S/6944	5529/S/6945	5529/S/6946
ID / Client ID	#19	#20	#21	#22
Lot Number	-	-	-	-
Date / Time Tested	21/11/2012	21/11/2012	21/11/2012	21/11/2012
Material Source	Insitu	Insitu	Insitu	Insitu
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1
Test / Layer Depth (mm)	150 / -	150 / -	150 / -	150 / -
Standard or Modified	Standard	Standard	Standard	Standard
	Location as per Site Plan RL:43.75	Location as per Site Plan RL:42.8	Location as per Site Plan RL:34.00	Location as per Site Plan RL:34.04
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet (%)	0	0	0	0
Sample Oversize Dry (%)	0	0	0	0
MDR Sample Number	5529/S/6943	5529/S/6944	5529/S/6945	5529/S/6946
MDR Sample Date / Update	21/11/2012	21/11/2012	21/11/2012	21/11/2012
Assigned MDR (Yes / No)	No	No	No	No
Moisture Test Results:				
Field Moisture Content (%)	7.3	8.1	9.7	9.0
Optimum Moisture Content (%)	11.0	13.0	12.0	12.5
Variation from OMC (%)	4.0% Dryer than OMC	5.0% Dryer than OMC	2.5% Dryer than OMC	3.5% Dryer than OMC
Moisture Ratio (%)	65.0	62.5	81.0	72.0
Density Test Results:				
Field Dry Density (t/m³)	1.98	1.97	2.00	2.06
Maximum Dry Density (t/m³)	1.93	1.86	1.91	1.91
Dry Density Ratio Required (%)	-	-	-	-
Dry Density Ratio (%)	102.5	106.0	105.0	107.5

Remarks

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DRY DENSITY RATIO / MOISTURE RATIO REPORT

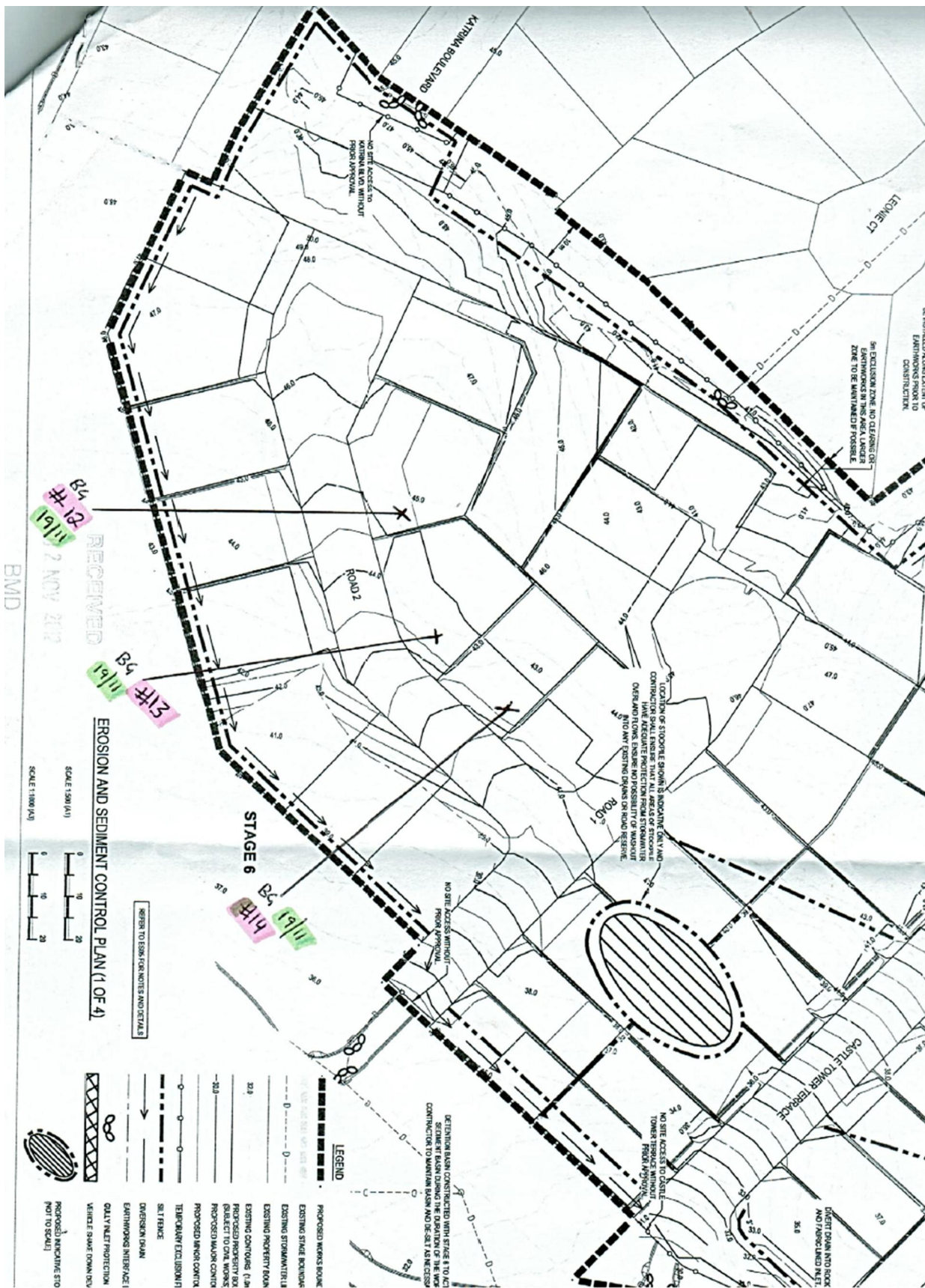
Client:	BMD Urban	Report Number:	5529/R/2115-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	
Location:	Brindabella way gladstone	Report Date:	29/11/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/6936	5529/S/6937	5529/S/6938	
ID / Client ID	#12	#13	#14	
Lot Number	-	-	-	
Date / Time Tested	19/11/2012	19/11/2012	19/11/2012	
Material Source	Insitu	Insitu	Insitu	
Material Type	Fill	Fill	Fill	
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	
Test / Layer Depth (mm)	150 / -	150 / -	150 / -	
Standard or Modified	Standard	Standard	Standard	
	Location as per Site Plan	Location as per Site Plan	Location as per Site Plan	
	RL:45.58	RL:43.89	RL42.78	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet (%)	0	0	0	
Sample Oversize Dry (%)	0	0	0	
MDR Sample Number	5529/S/6936	5529/S/6937	5529/S/6938	
MDR Sample Date / Update	19/11/2012	19/11/2012	19/11/2012	
Assigned MDR (Yes / No)	No	No	No	
Moisture Test Results:				
Field Moisture Content (%)	11.5	14.4	11.2	
Optimum Moisture Content (%)	12.0	14.5	14.0	
Variation from OMC (%)	0.5% Dryer than OMC	0.0% Dryer than OMC	3.0% Dryer than OMC	
Moisture Ratio (%)	96.5	99.5	80.0	
Density Test Results:				
Field Dry Density (t/m³)	1.93	1.82	1.85	
Maximum Dry Density (t/m³)	1.93	1.90	1.86	
Dry Density Ratio Required (%)	-	-	-	
Dry Density Ratio (%)	100.0	95.5	99.5	

Remarks

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Cardno Bowler Level one Report

Vantage Stage 7
(Lot 410)



Prepared for BMD
25/7/2013

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Document Information

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Project Name

Vantage Stage 7 (Lot 410)

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1. INTRODUCTION

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2. INSPECTIONS / COMPACTION CONTROL TESTING

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Compaction control tests, meeting the project specification were taken. These tests were carried out at regular intervals throughout the placement of fill in accordance with AS3798-2007 'Guidelines on Earthworks for commercial and residential developments'. Equipment used over the period of filling included scrapers, excavators, backhoes, graders, water trucks, sheepsfoot rollers tip trucks etc. The fill was placed at the front of the block and varied in depth. The test results attached are relevant to lot 410 with compaction.

The placement of fill for the proposed subdivision was carried out under level 1 arrangements, in a controlled manner and compacted to a density ratio of not less than the specified requirements. Given this, the fill may be deemed to be 'Controlled Fill' in accordance with AS2870-2007 'Residential Slabs & Footings'.

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DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client:	BMD Urban	Report Number:	5529/R/2116-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	
Location:	Brindabella way gladstone	Report Date:	29/11/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/6939	5529/S/6940	5529/S/6941	5529/S/6942
ID / Client ID	#15	#16	#17	#18
Lot Number	-	-	-	-
Date / Time Tested	21/11/2012	21/11/2012	21/11/2012	21/11/2012
Material Source	Insitu	Insitu	Insitu	Insitu
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1
Test / Layer Depth (mm)	150 / -	150 / -	150 / -	150 / -
Standard or Modified	Standard	Standard	Standard	Standard
	Location as per Site Plan	Location as per Site Plan	Location as per Site Plan	Location as per Site Plan
	RL:45.75	RL:45.52	RL:45.64	RL44.08
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet (%)	0	0	0	0
Sample Oversize Dry (%)	0	0	0	0
MDR Sample Number	5529/S/6939	5529/S/6940	5529/S/6941	5529/S/6942
MDR Sample Date / Update	21/11/2012	21/11/2012	21/11/2012	21/11/2012
Assigned MDR (Yes / No)	No	No	No	No
Moisture Test Results:				
Field Moisture Content (%)	8.2	8.0	7.6	8.5
Optimum Moisture Content (%)	11.5	11.5	14.5	12.0
Variation from OMC (%)	3.0% Drier than OMC	3.5% Drier than OMC	7.0% Drier than OMC	3.5% Drier than OMC
Moisture Ratio (%)	72.0	68.5	51.5	72.0
Density Test Results:				
Field Dry Density (t/m³)	2.06	2.04	1.97	1.86
Maximum Dry Density (t/m³)	2.01	1.97	2.02	1.91
Dry Density Ratio Required (%)	-	-	-	-
Dry Density Ratio (%)	102.5	103.5	97.5	97.0

Remarks

 <p>The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards</p> <p>Accredited for compliance with ISO/IEC 17025</p> <p>Laboratory Accreditation Number: 5529</p>	 <p>Approved Signatory: Michael Preston Form ID: W27ASRep Rev 1</p>
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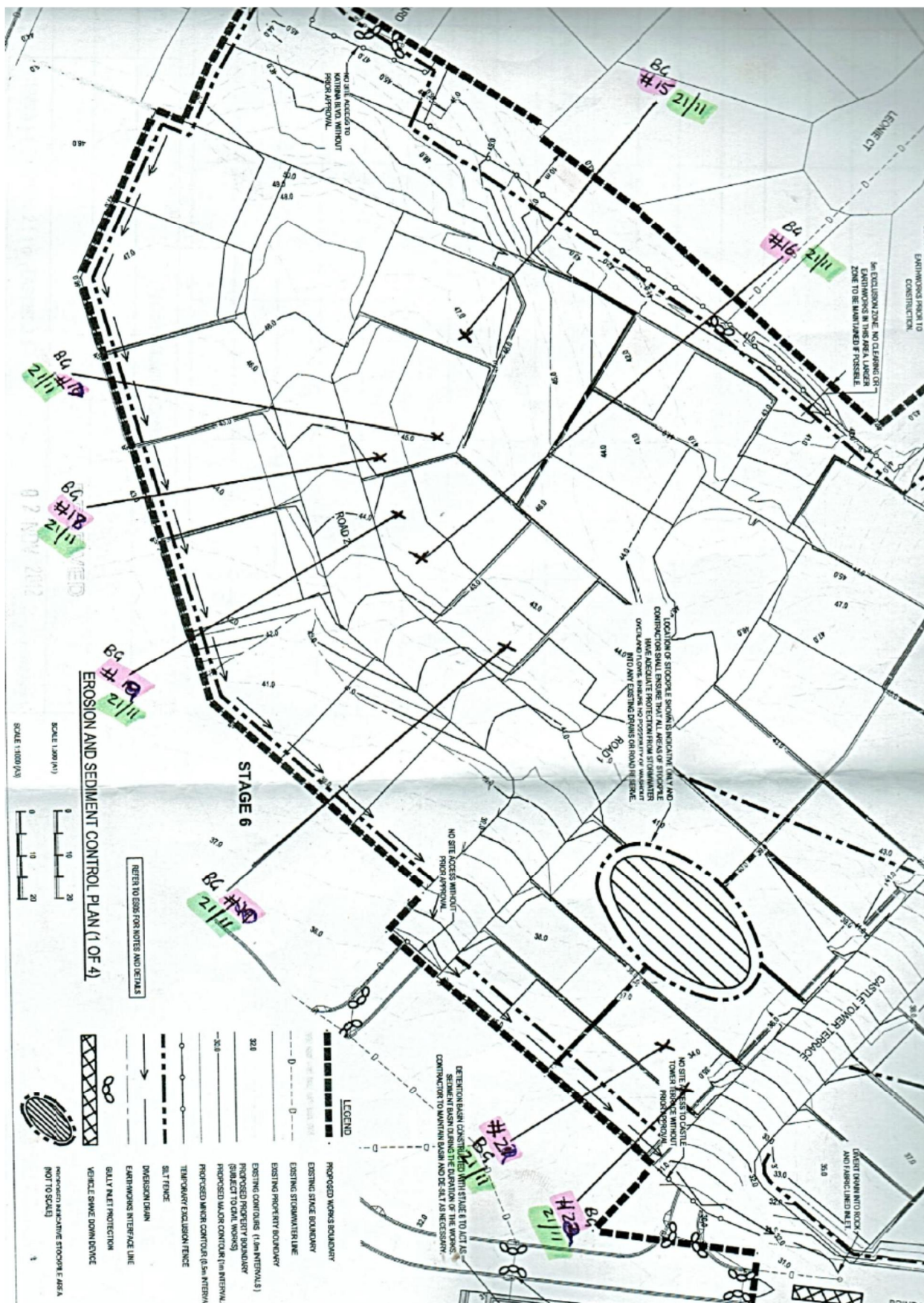
Client:	BMD Urban	Report Number:	5529/R/2116-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	
Location:	Brindabella way gladstone	Report Date:	29/11/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 2 of 2

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/6943	5529/S/6944	5529/S/6945	5529/S/6946
ID / Client ID	#19	#20	#21	#22
Lot Number	-	-	-	-
Date / Time Tested	21/11/2012	21/11/2012	21/11/2012	21/11/2012
Material Source	Insitu	Insitu	Insitu	Insitu
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1
Test / Layer Depth (mm)	150 / -	150 / -	150 / -	150 / -
Standard or Modified	Standard	Standard	Standard	Standard
	Location as per Site Plan	Location as per Site Plan	Location as per Site Plan	Location as per Site Plan
	RL:43.75	RL:42.8	RL:34.00	RL:34.04
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet (%)	0	0	0	0
Sample Oversize Dry (%)	0	0	0	0
MDR Sample Number	5529/S/6943	5529/S/6944	5529/S/6945	5529/S/6946
MDR Sample Date / Update	21/11/2012	21/11/2012	21/11/2012	21/11/2012
Assigned MDR (Yes / No)	No	No	No	No
Moisture Test Results:				
Field Moisture Content (%)	7.3	8.1	9.7	9.0
Optimum Moisture Content (%)	11.0	13.0	12.0	12.5
Variation from OMC (%)	4.0% Dryer than OMC	5.0% Dryer than OMC	2.5% Dryer than OMC	3.5% Dryer than OMC
Moisture Ratio (%)	65.0	62.5	81.0	72.0
Density Test Results:				
Field Dry Density (t/m ³)	1.98	1.97	2.00	2.06
Maximum Dry Density (t/m ³)	1.93	1.86	1.91	1.91
Dry Density Ratio Required (%)	-	-	-	-
Dry Density Ratio (%)	102.5	106.0	105.0	107.5

Remarks

 <p>The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards</p> <p>Accredited for compliance with ISO/IEC 17025</p> <p>Laboratory Accreditation Number: 5529</p>	 <p>Approved Signatory: Michael Preston Form ID: W27ASRep Rev 1</p>
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DRY DENSITY RATIO / MOISTURE RATIO REPORT

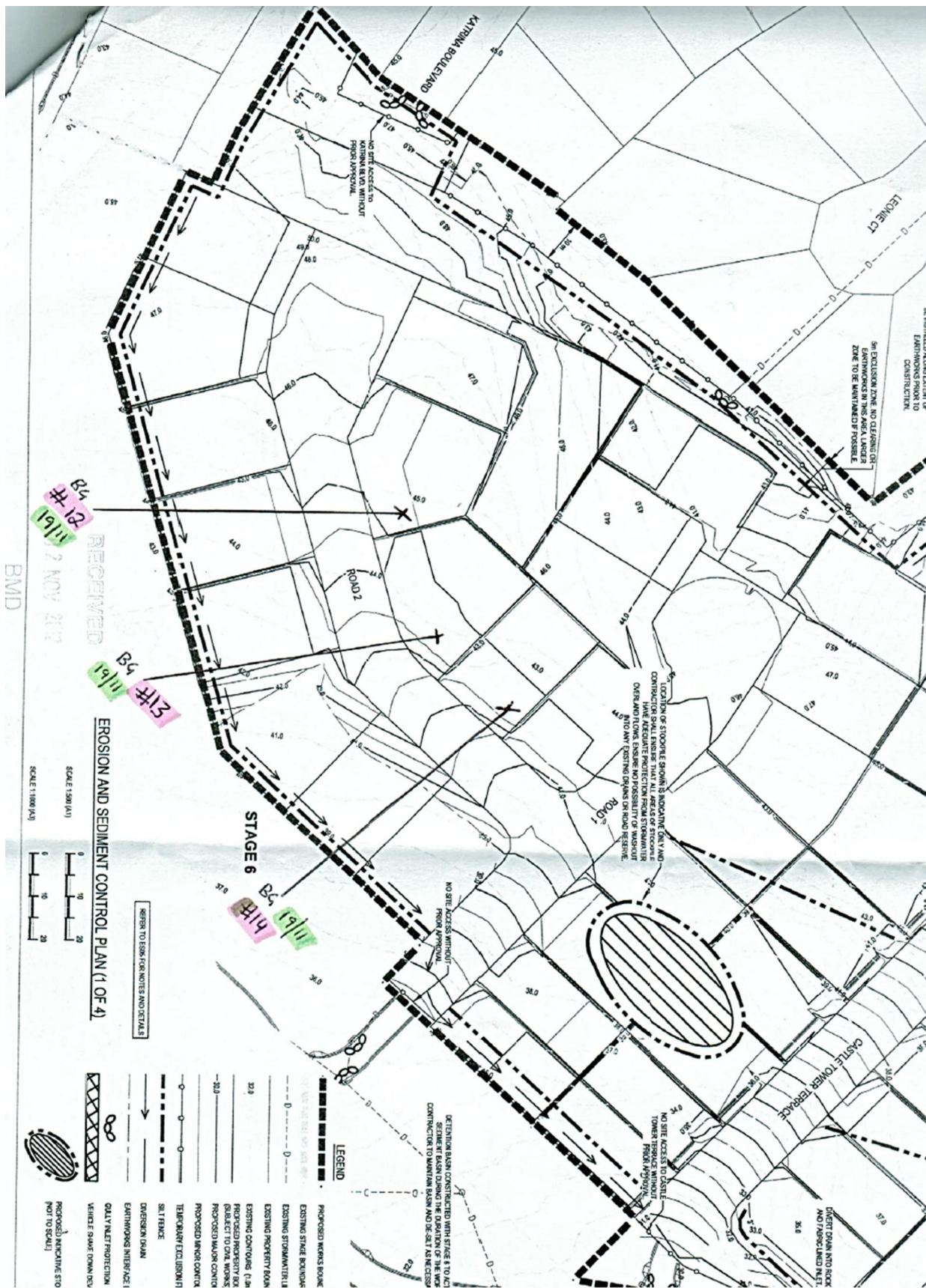
Client:	BMD Urban	Report Number:	5529/R/2115-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	
Location:	Brindabella way gladstone	Report Date:	29/11/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/6936	5529/S/6937	5529/S/6938	
ID / Client ID	#12	#13	#14	
Lot Number	-	-	-	
Date / Time Tested	19/11/2012	19/11/2012	19/11/2012	
Material Source	Insitu	Insitu	Insitu	
Material Type	Fill	Fill	Fill	
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	
Test / Layer Depth (mm)	150 / -	150 / -	150 / -	
Standard or Modified	Standard	Standard	Standard	
	Location as per Site Plan	Location as per Site Plan	Location as per Site Plan	
	RL:45.58	RL:43.89	RL42.78	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize Wet (%)	0	0	0	
Sample Oversize Dry (%)	0	0	0	
MDR Sample Number	5529/S/6936	5529/S/6937	5529/S/6938	
MDR Sample Date / Update	19/11/2012	19/11/2012	19/11/2012	
Assigned MDR (Yes / No)	No	No	No	
Moisture Test Results:				
Field Moisture Content (%)	11.5	14.4	11.2	
Optimum Moisture Content (%)	12.0	14.5	14.0	
Variation from OMC (%)	0.5% Dryer than OMC	0.0% Dryer than OMC	3.0% Dryer than OMC	
Moisture Ratio (%)	96.5	99.5	80.0	
Density Test Results:				
Field Dry Density (t/m³)	1.93	1.82	1.85	
Maximum Dry Density (t/m³)	1.93	1.90	1.86	
Dry Density Ratio Required (%)	-	-	-	
Dry Density Ratio (%)	100.0	95.5	99.5	

Remarks

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Cardno Bowler Level one Report

Vantage Stage 7
(Lot 411)



Prepared for BMD
25/7/2013

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Document Information

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BMD

Project Name

Vantage Stage 7 (Lot 411)

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1. INTRODUCTION

Cardno Bowler Pty Ltd was commissioned by BMD to carry out Level 1 supervision of the placement of fill for Vantage stage 7.

2. INSPECTIONS / COMPACTION CONTROL TESTING

Prior to filling operations on Lot 411, inspections and compaction tests were carried out on areas of sub-grade soils. The inspections confirmed that vegetation had been stripped from the fill area prior to filling.

Compaction control tests, meeting the project specification were taken. These tests were carried out at regular intervals throughout the placement of fill in accordance with AS3798-2007 'Guidelines on Earthworks for commercial and residential developments'. Equipment used over the period of filling included scrapers, excavators, backhoes, graders, water trucks, sheepsfoot rollers tip trucks etc. The fill was placed over a section at the front of the block and varied in depth. The test results attached are relevant to lot 411 with compaction.

The placement of fill for the proposed subdivision was carried out under level 1 arrangements, in a controlled manner and compacted to a density ratio of not less than the specified requirements. Given this, the fill may be deemed to be 'Controlled Fill' in accordance with AS2870-2007 'Residential Slabs & Footings'.

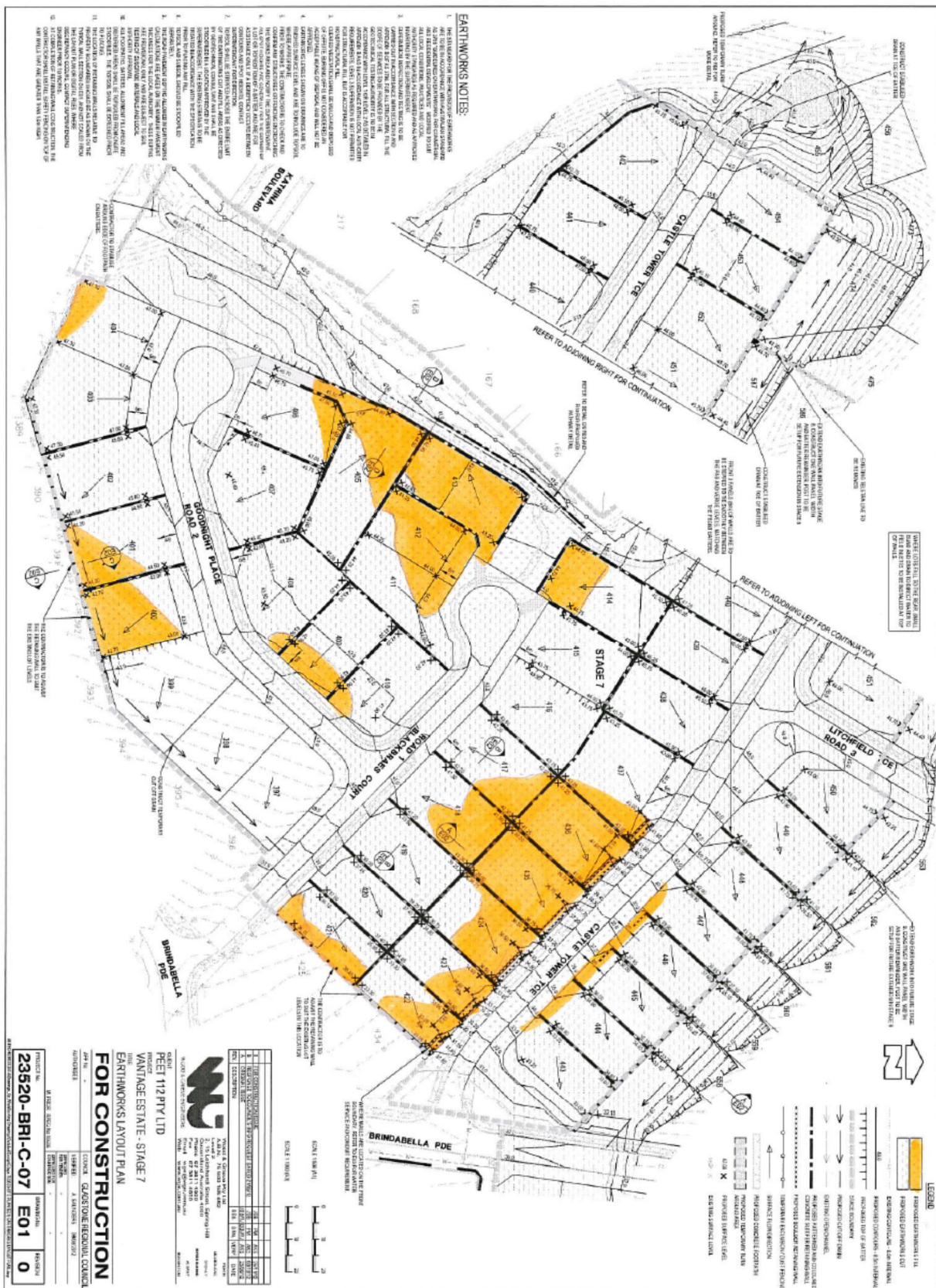
For and on behalf of Cardno Bowler,



Michael Preston

Laboratory Manager

Gladstone.





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DRY DENSITY RATIO / MOISTURE RATIO REPORT

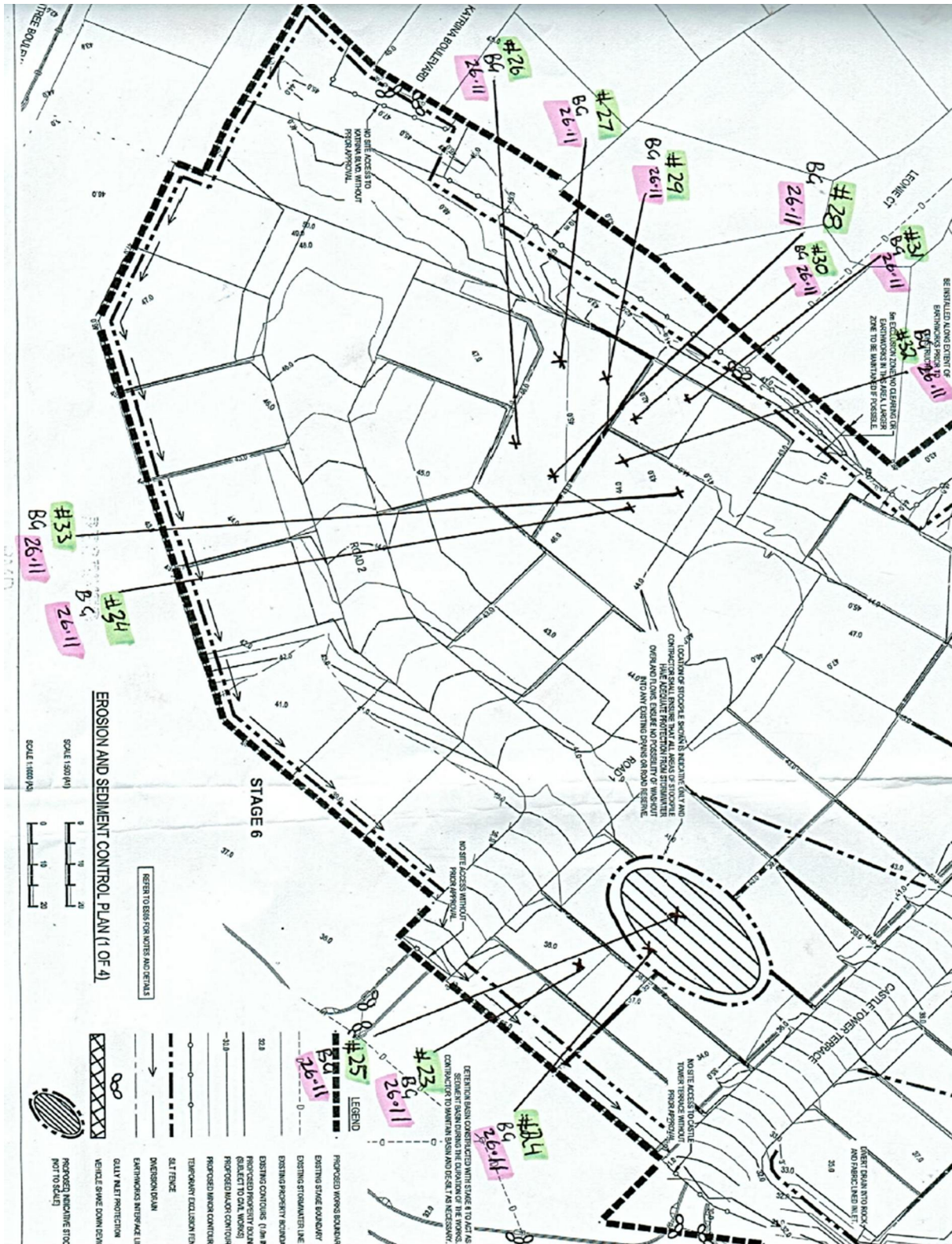
Client:	BMD Urban	Report Number:	5529/R/2142-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	N/A
Location:	Brindabella way gladstone	Report Date:	05/12/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 3

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/7150	5529/S/7151	5529/S/7152	5529/S/7153
ID / Client ID	#23	#24	#25	#26
Lot Number	N/A	N/A	N/A	N/A
Date / Time Tested	26/11/2012	26/11/2012	26/11/2012	26/11/2012
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1
Test / Layer Depth (mm)	150 / 300	150 / 300	150 / 300	150 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Grid				
Easting (m)				
Northing (m)				
RL (m)	37.4	39.33	38.8	44.7
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet (%)	0	0	0	0
Sample Oversize Dry (%)	0	0	0	0
MDR Sample Number	5529/S/7150	5529/S/7151	5529/S/7152	5529/S/7153
MDR Sample Date / Update	26/11/2012	26/11/2012	26/11/2012	26/11/2012
Assigned MDR (Yes / No)	No	No	No	No
Moisture Test Results:				
Field Moisture Content (%)	6.8	6.0	10.4	10.6
Optimum Moisture Content (%)	8.0	7.5	11.0	10.5
Variation from OMC (%)	1.0% Drier than OMC	1.5% Drier than OMC	0.5% Drier than OMC	0.0% Wetter than OMC
Moisture Ratio (%)	86.0	79.0	94.5	102.0
Density Test Results:				
Field Dry Density (t/m ³)	2.05	2.03	1.88	1.83
Maximum Dry Density (t/m ³)	2.16	2.13	1.94	1.89
Dry Density Ratio Required (%)	-	-	-	-
Dry Density Ratio (%)	95.0	95.5	97.0	97.0

Remarks

 <p>The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards</p> <p>Accredited for compliance with ISO/IEC 17025</p> <p>Laboratory Accreditation Number: 5529</p>	 <p>Approved Signatory: Michael Preston Form ID: W27ASRep Rev 1</p>
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Cardno Bowler Level one Report

Vantage Stage 7
(Lot 412)



Prepared for BMD
25/7/2013

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Document Information

Prepared for

BMD

Project Name

Vantage Stage 7 (Lot 412)

File Reference


5529/P/83

Job Reference

Date

25/7/2013

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Version	Date	Description of Revision	Prepared By	Prepared (Signature)	Reviewed By	Reviewed (Signature)
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Version	Reason for Issue	Approved for Release By	Approved (Signature)	Approved Release Date

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1. INTRODUCTION

Cardno Bowler Pty Ltd was commissioned by BMD to carry out Level 1 supervision of the placement of fill for Vantage stage 7.

2. INSPECTIONS / COMPACTION CONTROL TESTING

Prior to filling operations on Lot 412, inspections and compaction tests were carried out on areas of sub-grade soils. The inspections confirmed that vegetation had been stripped from the fill area prior to filling.

Compaction control tests, meeting the project specification were taken. These tests were carried out at regular intervals throughout the placement of fill in accordance with AS3798-2007 'Guidelines on Earthworks for commercial and residential developments'. Equipment used over the period of filling included scrapers, excavators, backhoes, graders, water trucks, sheepsfoot rollers tip trucks etc. The fill was placed over most of the block and varied in depth. The test results attached are relevant to lot 412 with compaction.

The placement of fill for the proposed subdivision was carried out under level 1 arrangements, in a controlled manner and compacted to a density ratio of not less than the specified requirements. Given this, the fill may be deemed to be 'Controlled Fill' in accordance with AS2870-2007 'Residential Slabs & Footings'.

For and on behalf of Cardno Bowler,



Michael Preston

Laboratory Manager

Gladstone.





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DRY DENSITY RATIO / MOISTURE RATIO REPORT

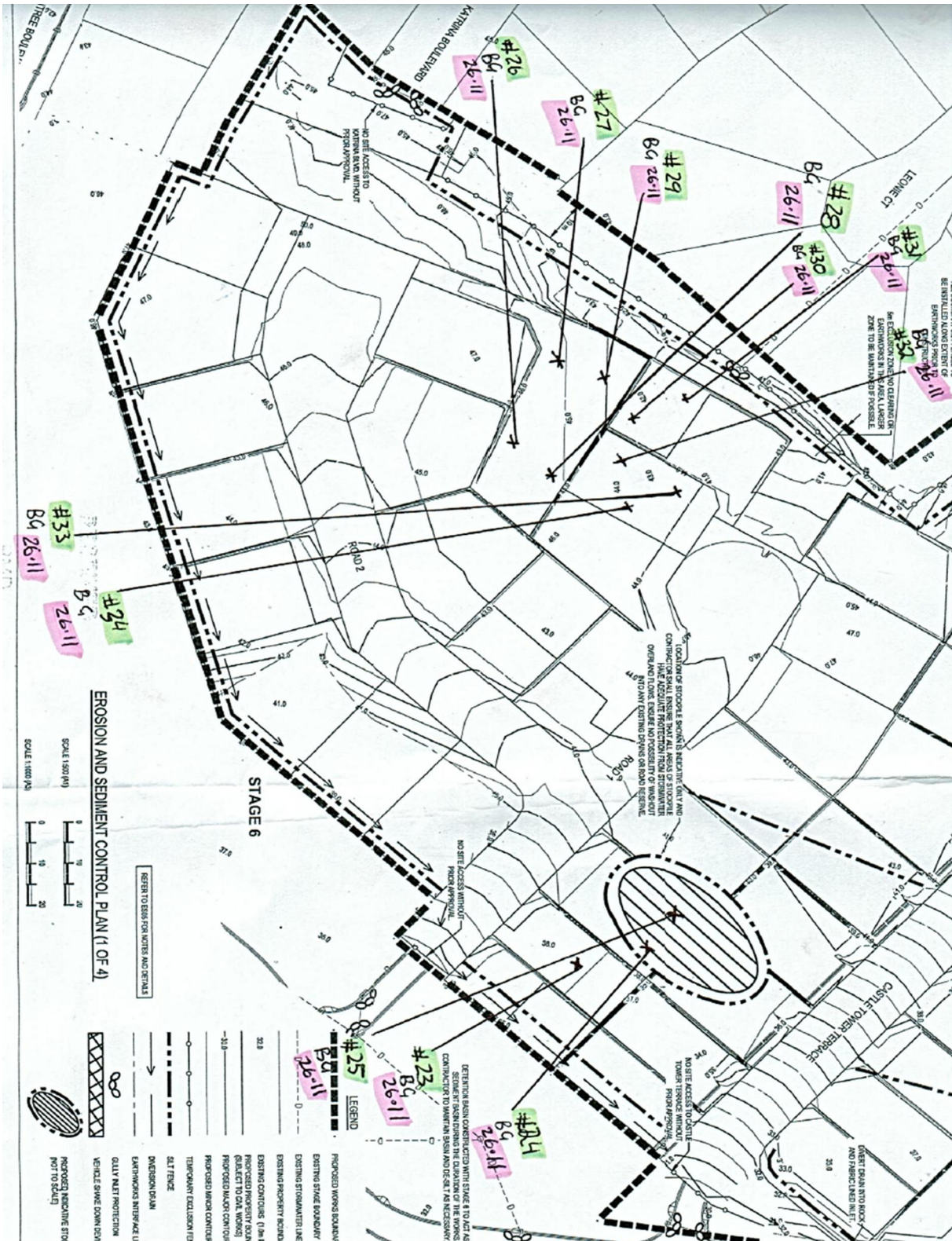
Client:	BMD Urban	Report Number:	5529/R/2142-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	N/A
Location:	Brindabella way gladstone	Report Date:	05/12/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 3

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/7150	5529/S/7151	5529/S/7152	5529/S/7153
ID / Client ID	#23	#24	#25	#26
Lot Number	N/A	N/A	N/A	N/A
Date / Time Tested	26/11/2012	26/11/2012	26/11/2012	26/11/2012
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1
Test / Layer Depth (mm)	150 / 300	150 / 300	150 / 300	150 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Grid				
Easting (m)				
Northing (m)				
RL (m)	37.4	39.33	38.8	44.7
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet (%)	0	0	0	0
Sample Oversize Dry (%)	0	0	0	0
MDR Sample Number	5529/S/7150	5529/S/7151	5529/S/7152	5529/S/7153
MDR Sample Date / Update	26/11/2012	26/11/2012	26/11/2012	26/11/2012
Assigned MDR (Yes / No)	No	No	No	No
Moisture Test Results:				
Field Moisture Content (%)	6.8	6.0	10.4	10.6
Optimum Moisture Content (%)	8.0	7.5	11.0	10.5
Variation from OMC (%)	1.0% Drier than OMC	1.5% Drier than OMC	0.5% Drier than OMC	0.0% Wetter than OMC
Moisture Ratio (%)	86.0	79.0	94.5	102.0
Density Test Results:				
Field Dry Density (t/m³)	2.05	2.03	1.88	1.83
Maximum Dry Density (t/m³)	2.16	2.13	1.94	1.89
Dry Density Ratio Required (%)	-	-	-	-
Dry Density Ratio (%)	95.0	95.5	97.0	97.0

Remarks

 <p>The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards</p> <p>Accredited for compliance with ISO/IEC 17025</p> <p>Laboratory Accreditation Number: 5529</p>	 <p>Approved Signatory: Michael Preston Form ID: W27ASRep Rev 1</p>
---	--





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DRY DENSITY RATIO / MOISTURE RATIO REPORT

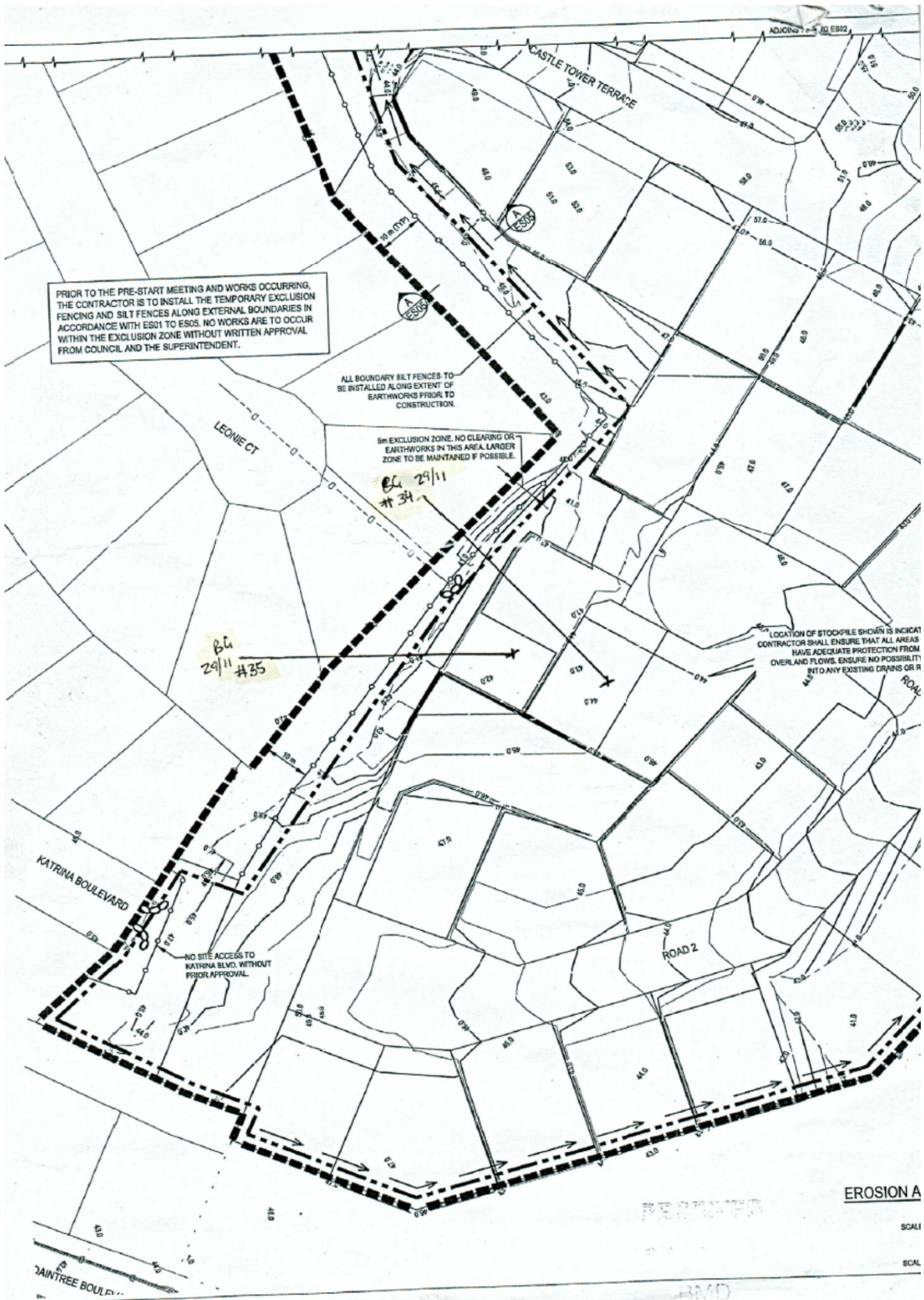
Client:	BMD Urban	Report Number:	5529/R/2225-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	N/A
Location:	Brindabella way gladstone	Report Date:	11/12/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/7185	5529/S/7186		
ID / Client ID	#35	#34		
Lot Number	N/A	N/A		
Date / Time Tested	29/11/2012	29/11/2012		
Material Source	Onsite	Onsite		
Material Type	Fill	Fill		
Sampling Method	AS1289.1.2.1	AS1289.1.2.1		
Test / Layer Depth (mm)	150 / 300	150 / 300		
Standard or Modified	Standard	Standard		
Grid				
Easting (m)	As Per site Plan	As Per site Plan		
Northing (m)				
RL (m)	43.2	44.0		
Test Fraction (mm)	< 19.0 mm	< 19.0 mm		
Sample Oversize Wet (%)	14	6		
Sample Oversize Dry (%)	15	6		
MDR Sample Number	5529/S/7185	5529/S/7186		
MDR Sample Date / Update	29/11/2012	29/11/2012		
Assigned MDR (Yes / No)	No	No		
Moisture Test Results:				
Field Moisture Content (%)	11.6	10.7		
Optimum Moisture Content (%)	14.5	16.0		
Variation from OMC (%)	2.5% Drier than OMC	5.5% Drier than OMC		
Moisture Ratio (%)	81.0	66.5		
Density Test Results:				
Field Dry Density (t/m³)	1.89	1.92		
Maximum Dry Density (t/m³)	1.86	1.78		
Dry Density Ratio Required (%)	-	-		
Dry Density Ratio (%)	101.5	108.0		

Remarks

 <p>The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards</p> <p>Accredited for compliance with ISO/IEC 17025</p> <p>Laboratory Accreditation Number: 5529</p>	 <p>Approved Signatory: Michael Preston Form ID: W27ASRep Rev 1</p>
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Cardno Bowler Level one Report

Vantage Stage 7
(Lot 413)



Prepared for BMD
25/7/2013

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Document Information

Prepared for

BMD

Project Name

Vantage Stage 7 (Lot 413)

File Reference

Job Reference

5529/P/83

Date

25/7/2013

Document Control

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1	12/7/2013		MP		DC	

Version	Reason for Issue	Approved for Release By	Approved (Signature)	Approved Release Date
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1. INTRODUCTION

Cardno Bowler Pty Ltd was commissioned by BMD to carry out Level 1 supervision of the placement of fill for Vantage stage 7.

2. INSPECTIONS / COMPACTION CONTROL TESTING

Prior to filling operations on Lot 413, inspections and compaction tests were carried out on areas of sub-grade soils. The inspections confirmed that vegetation had been stripped from the fill area prior to filling.

Compaction control tests, meeting the project specification were taken. These tests were carried out at regular intervals throughout the placement of fill in accordance with AS3798-2007 'Guidelines on Earthworks for commercial and residential developments'. Equipment used over the period of filling included scrapers, excavators, backhoes, graders, water trucks, sheepsfoot rollers tip trucks etc. The fill was placed over a section at the front of the block and varied in depth. The test results attached are relevant to lot 413 with compaction.

The placement of fill for the proposed subdivision was carried out under level 1 arrangements, in a controlled manner and compacted to a density ratio of not less than the specified requirements. Given this, the fill may be deemed to be 'Controlled Fill' in accordance with AS2870-2007 'Residential Slabs & Footings'.

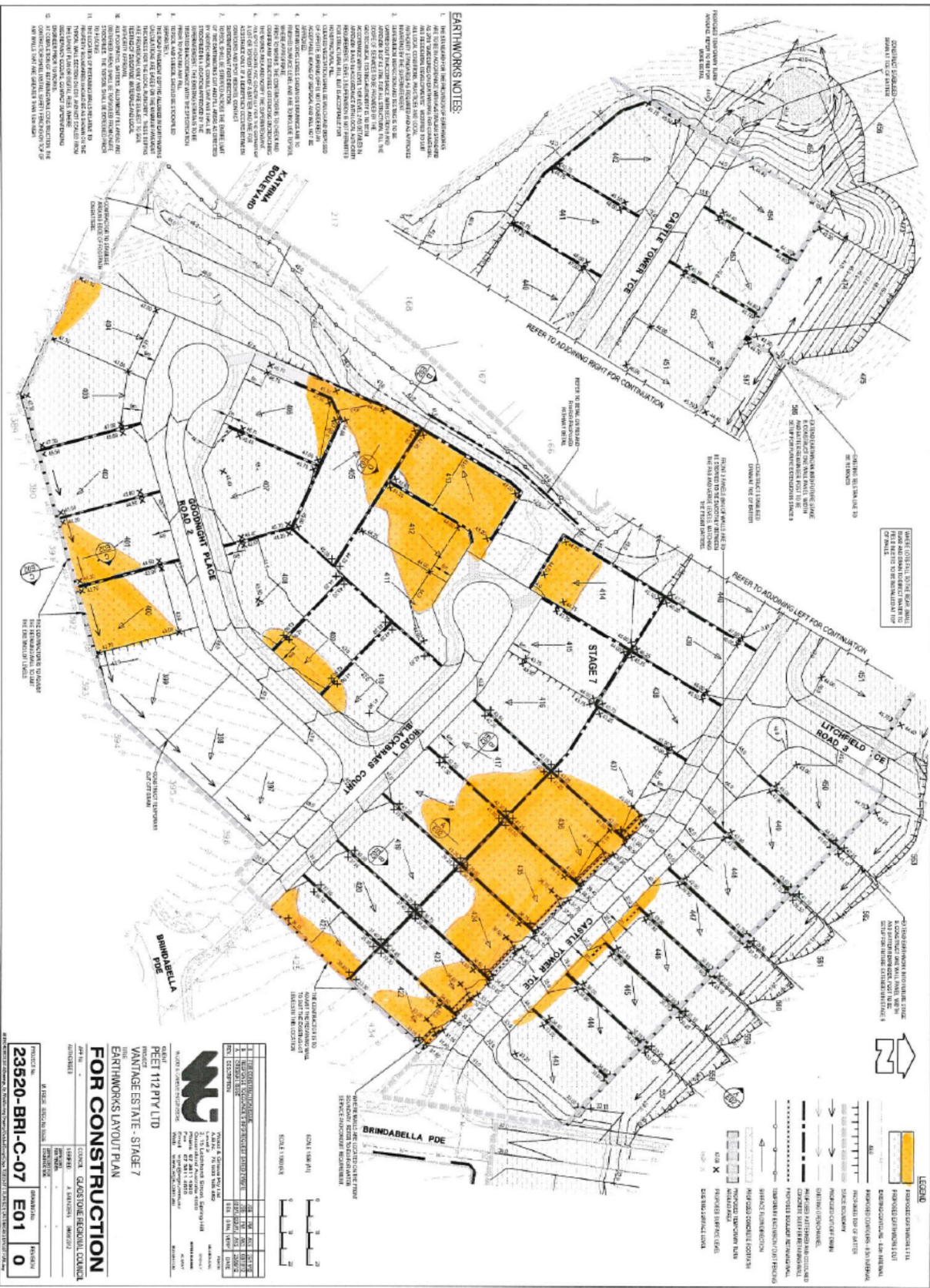
For and on behalf of Cardno Bowler,



Michael Preston

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DRY DENSITY RATIO / MOISTURE RATIO REPORT

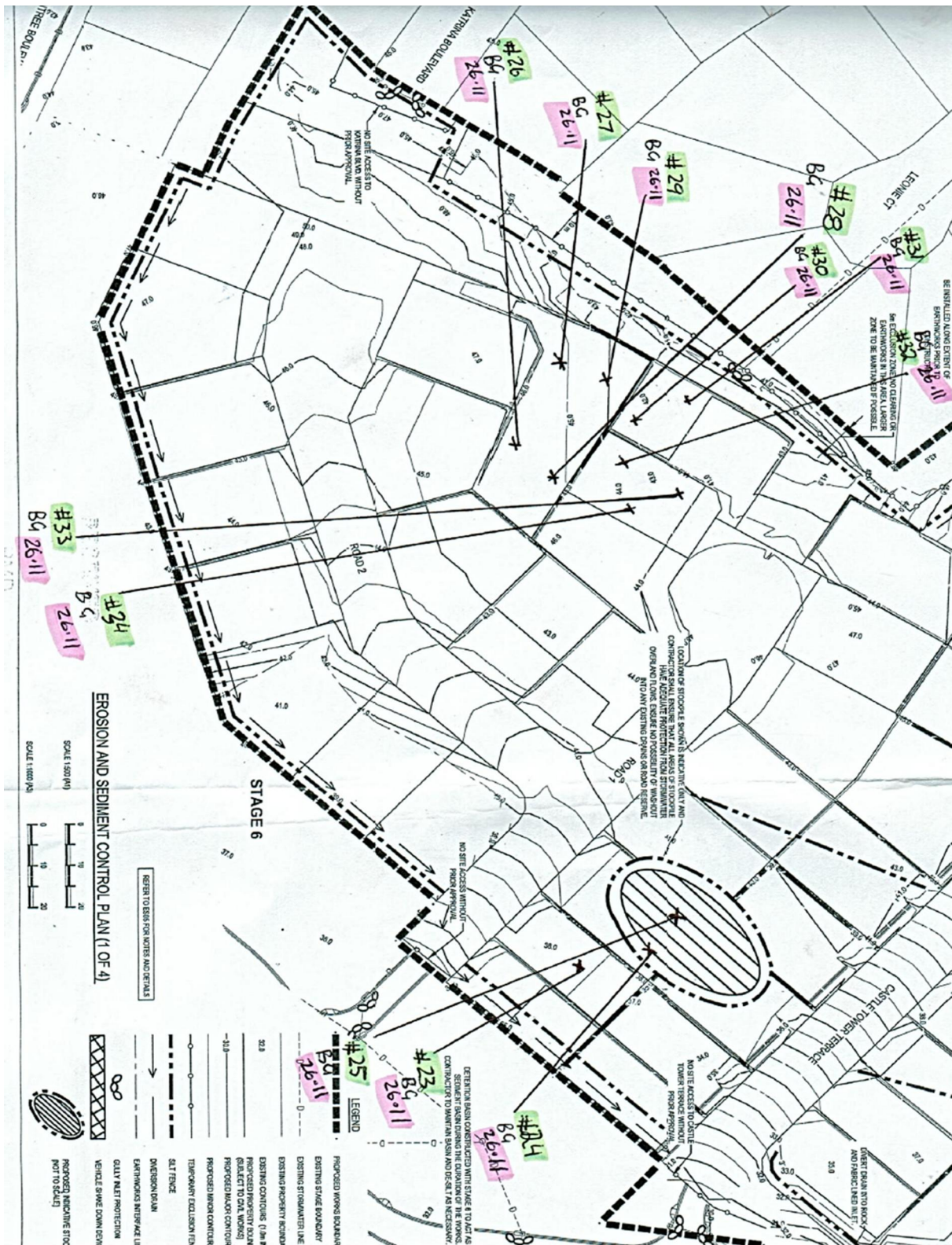
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Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	N/A
Location:	Brindabella way gladstone	Report Date:	05/12/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 3

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/7150	5529/S/7151	5529/S/7152	5529/S/7153
ID / Client ID	#23	#24	#25	#26
Lot Number	N/A	N/A	N/A	N/A
Date / Time Tested	26/11/2012	26/11/2012	26/11/2012	26/11/2012
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1
Test / Layer Depth (mm)	150 / 300	150 / 300	150 / 300	150 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Grid				
Easting (m)				
Northing (m)				
RL (m)	37.4	39.33	38.8	44.7
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet (%)	0	0	0	0
Sample Oversize Dry (%)	0	0	0	0
MDR Sample Number	5529/S/7150	5529/S/7151	5529/S/7152	5529/S/7153
MDR Sample Date / Update	26/11/2012	26/11/2012	26/11/2012	26/11/2012
Assigned MDR (Yes / No)	No	No	No	No
Moisture Test Results:				
Field Moisture Content (%)	6.8	6.0	10.4	10.6
Optimum Moisture Content (%)	8.0	7.5	11.0	10.5
Variation from OMC (%)	1.0% Drier than OMC	1.5% Drier than OMC	0.5% Drier than OMC	0.0% Wetter than OMC
Moisture Ratio (%)	86.0	79.0	94.5	102.0
Density Test Results:				
Field Dry Density (t/m ³)	2.05	2.03	1.88	1.83
Maximum Dry Density (t/m ³)	2.16	2.13	1.94	1.89
Dry Density Ratio Required (%)	-	-	-	-
Dry Density Ratio (%)	95.0	95.5	97.0	97.0

Remarks

 <p>The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards</p> <p>Accredited for compliance with ISO/IEC 17025</p> <p>Laboratory Accreditation Number: 5529</p>	 <p>Approved Signatory: Michael Preston Form ID: W27ASRep Rev 1</p>
---	--





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DRY DENSITY RATIO / MOISTURE RATIO REPORT

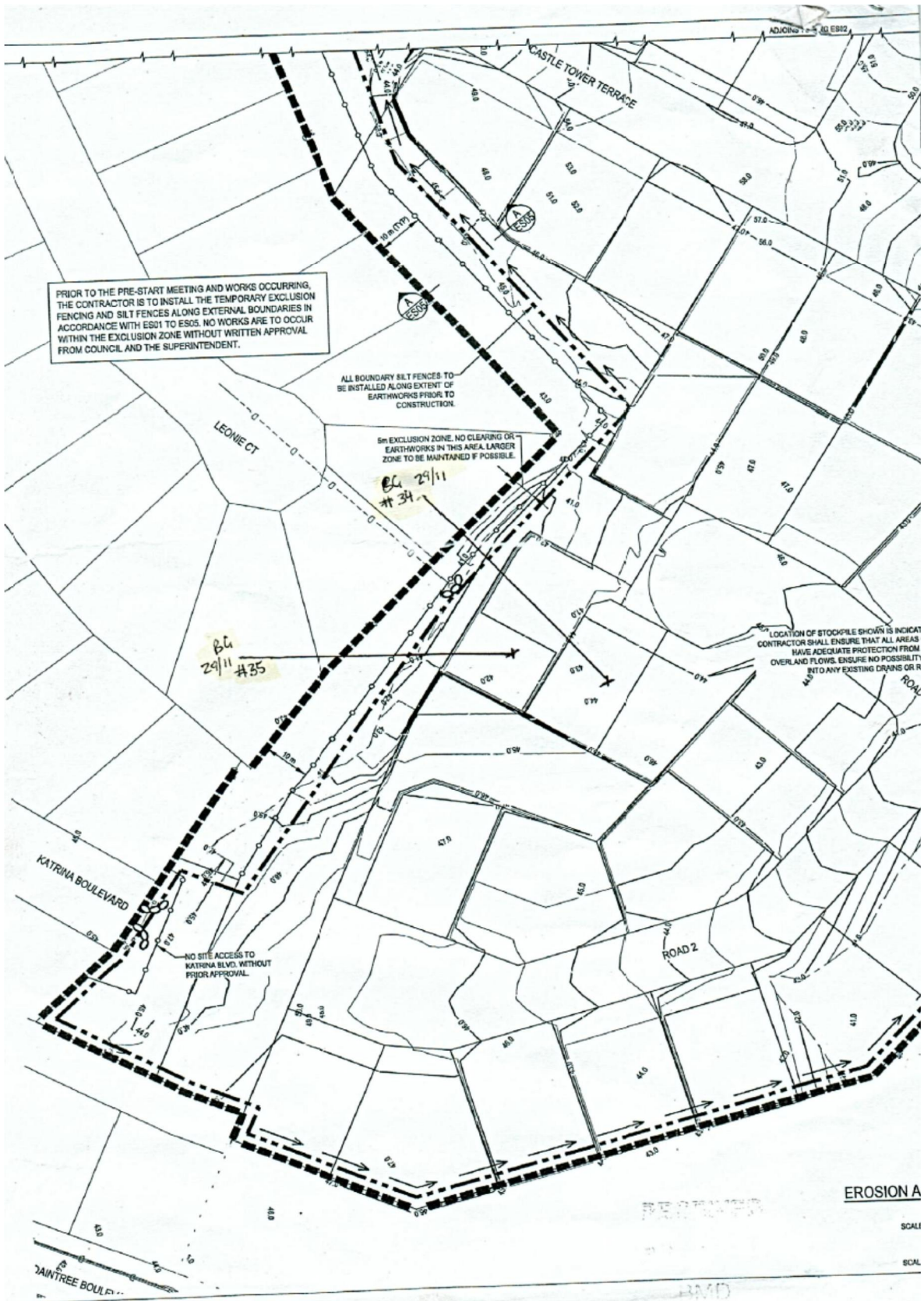
Client:	BMD Urban	Report Number:	5529/R/2225-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	N/A
Location:	Brindabella way gladstone	Report Date:	11/12/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 1

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/7185	5529/S/7186		
ID / Client ID	#35	#34		
Lot Number	N/A	N/A		
Date / Time Tested	29/11/2012	29/11/2012		
Material Source	Onsite	Onsite		
Material Type	Fill	Fill		
Sampling Method	AS1289.1.2.1	AS1289.1.2.1		
Test / Layer Depth (mm)	150 / 300	150 / 300		
Standard or Modified	Standard	Standard		
Grid				
Easting (m)	As Per site Plan	As Per site Plan		
Northing (m)				
RL (m)	43.2	44.0		
Test Fraction (mm)	< 19.0 mm	< 19.0 mm		
Sample Oversize Wet (%)	14	6		
Sample Oversize Dry (%)	15	6		
MDR Sample Number	5529/S/7185	5529/S/7186		
MDR Sample Date / Update	29/11/2012	29/11/2012		
Assigned MDR (Yes / No)	No	No		
Moisture Test Results:				
Field Moisture Content (%)	11.6	10.7		
Optimum Moisture Content (%)	14.5	16.0		
Variation from OMC (%)	2.5% Drier than OMC	5.5% Drier than OMC		
Moisture Ratio (%)	81.0	66.5		
Density Test Results:				
Field Dry Density (t/m ³)	1.89	1.92		
Maximum Dry Density (t/m ³)	1.86	1.78		
Dry Density Ratio Required (%)	-	-		
Dry Density Ratio (%)	101.5	108.0		

Remarks

 <p>The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards</p> <p>Accredited for compliance with ISO/IEC 17025</p> <p>Laboratory Accreditation Number: 5529</p>	 <p>Approved Signatory: Michael Preston Form ID: W27ASRep Rev 1</p>
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Cardno Bowler Level one Report

Vantage Stage 7
(Lot 414)



Prepared for BMD
25/7/2013

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Document Information

Prepared for

BMD

Project Name

Vantage Stage 7 (Lot 414)

File Reference



Job Reference

5529/P/83

Date

25/7/2013

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1	12/7/2013		MP		DC	

Version	Reason for Issue	Approved for Release By	Approved (Signature)	Approved Release Date

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1. INTRODUCTION

Cardno Bowler Pty Ltd was commissioned by BMD to carry out Level 1 supervision of the placement of fill for Vantage stage 7.

2. INSPECTIONS / COMPACTION CONTROL TESTING

Prior to filling operations on Lot 414, inspections and compaction tests were carried out on areas of sub-grade soils. The inspections confirmed that vegetation had been stripped from the fill area prior to filling.

Compaction control tests, meeting the project specification were taken. These tests were carried out at regular intervals throughout the placement of fill in accordance with AS3798-2007 'Guidelines on Earthworks for commercial and residential developments'. Equipment used over the period of filling included scrapers, excavators, backhoes, graders, water trucks, sheepsfoot rollers tip trucks etc. The fill was placed over a section at the front of the block and varied in depth. The test results attached are relevant to lot 414 with compaction.

The placement of fill for the proposed subdivision was carried out under level 1 arrangements, in a controlled manner and compacted to a density ratio of not less than the specified requirements. Given this, the fill may be deemed to be 'Controlled Fill' in accordance with AS2870-2007 'Residential Slabs & Footings'.

For and on behalf of Cardno Bowler,



Michael Preston

Laboratory Manager

Gladstone.





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DRY DENSITY RATIO / MOISTURE RATIO REPORT

Client:	BMD Urban	Report Number:	5529/R/2142-1
Client Address:	25 Cambridge Prade, Manly	Project Number:	5529/P/83
Project:	Vantage Estate Stage 7	Lot Number:	N/A
Location:	Brindabella way gladstone	Report Date:	05/12/2012
Component:		Client Reference/s:	
Area Description:		Page Number:	Page 1 of 3

Test Procedures:	AS1289.5.4.1, AS1289.5.1.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	5529/S/7150	5529/S/7151	5529/S/7152	5529/S/7153
ID / Client ID	#23	#24	#25	#26
Lot Number	N/A	N/A	N/A	N/A
Date / Time Tested	26/11/2012	26/11/2012	26/11/2012	26/11/2012
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1	AS1289.1.2.1
Test / Layer Depth (mm)	150 / 300	150 / 300	150 / 300	150 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Grid				
Easting (m)				
Northing (m)				
RL (m)	37.4	39.33	38.8	44.7
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize Wet (%)	0	0	0	0
Sample Oversize Dry (%)	0	0	0	0
MDR Sample Number	5529/S/7150	5529/S/7151	5529/S/7152	5529/S/7153
MDR Sample Date / Update	26/11/2012	26/11/2012	26/11/2012	26/11/2012
Assigned MDR (Yes / No)	No	No	No	No
Moisture Test Results:				
Field Moisture Content (%)	6.8	6.0	10.4	10.6
Optimum Moisture Content (%)	8.0	7.5	11.0	10.5
Variation from OMC (%)	1.0% Drier than OMC	1.5% Drier than OMC	0.5% Drier than OMC	0.0% Wetter than OMC
Moisture Ratio (%)	86.0	79.0	94.5	102.0
Density Test Results:				
Field Dry Density (t/m ³)	2.05	2.03	1.88	1.83
Maximum Dry Density (t/m ³)	2.16	2.13	1.94	1.89
Dry Density Ratio Required (%)	-	-	-	-
Dry Density Ratio (%)	95.0	95.5	97.0	97.0

Remarks

 <p>The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards</p> <p>Accredited for compliance with ISO/IEC 17025</p> <p>Laboratory Accreditation Number: 5529</p>	 <p>Approved Signatory: Michael Preston Form ID: W27ASRep Rev 1</p>
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