LEGEND

- GEOTECHNICAL INVESTIGATIONS AREA

AURECON GI

- BOREHOLE (BH)
- CONE PENETRATION TEST (CPT)
- TEST PIT (TP)
- HAND AUGER (HA)
- SEISMIC DILATOMETER (sDMT)
- MASW

EXISTING GI / WELLS

- BOREHOLE (BH)
- WATERBORE (WB)
- HAND AUGER (HA)

HA009, TP027, TP028, CPT047, CPT043, HA006, sDMT003, CPT048, MASW 18, CPT042, MASW 11, CPT039, CPT041, BH011, BH012, CPT038, CPT040, HA010, CPT037, HA19, BC4033, HA18, CPT035, TP025, TP026, BH009, BH010, sDMT002, TP024, MASW 14, MASW 16, CPT034, BH007, BH008, CPT033, CPT036, MASW 17, CPT032, HA004, CPT031, MASW 10, MASW 12, TP023, BH04, TP022, TP021, HA14, BH05, CPT029, sDMT001, CPT027, HA15, CPT030, MASW 9, HA16, BH003, BH006, CPT026, MASW 7, HA17, CPT028, CPT024, HA07, TP018, TP020, HA003, MASW 6, CPT025, CPT015, HA002, TP014, TP019, CPT023, CPT021, HA10, BH005, MASW 8, TP017, CPT016, MASW 5, MASW 3, HA001

Metres
0 15 30 60 90 120 150

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION LOCATIONS	J KUPEC

SCALE	SIZE
1:2,000	A3

DRAWN: M DOONEY
DESIGNED: J MUIRSON
REVIEWED: -

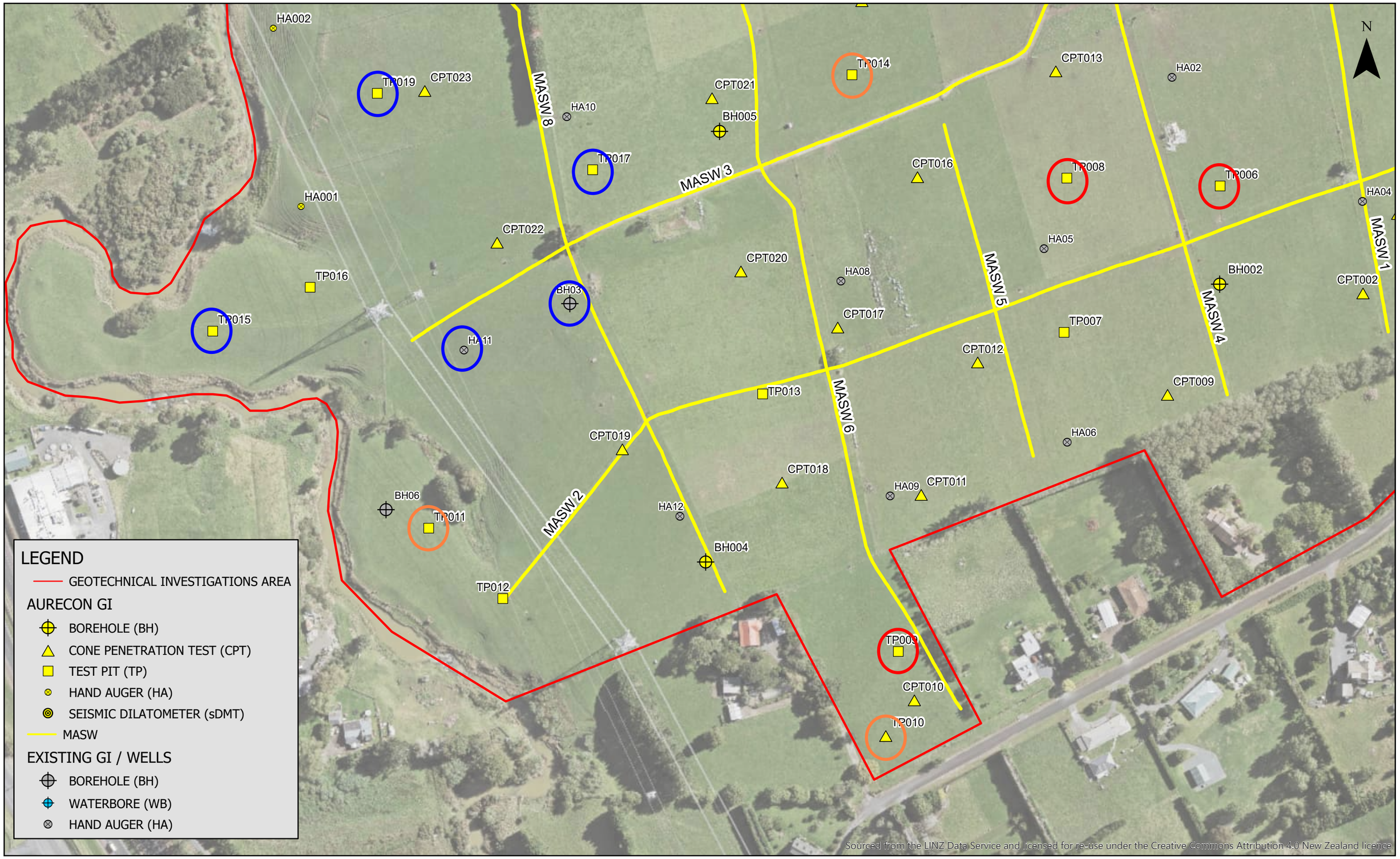
FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED:

PROJECT: KIWI PROPERTY GROUP LIMITED

TITLE: DRURY CENTRE PROJECT GEOTECHNICAL INVESTIGATION LOCATIONS
GIS SHEET 3 OF 5

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0003	A



Metres
0 15 30 60 90 120 150

CLIENT

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Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION LOCATIONS	J KUPEC

SCALE	SIZE
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DRAWN: M DOONEY
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REVIEWED: -

FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED

PROJECT	KIWI PROPERTY GROUP LIMITED
TITLE	DRURY CENTRE PROJECT GEOTECHNICAL INVESTIGATION LOCATIONS GIS SHEET 4 OF 5

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0004	A

0 15 30 60 90 120 150 Metres

CLIENT

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www.aurecongroup.com

Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION LOCATIONS	J KUPEC

SCALE	SIZE
1:2,000	A3

DRAWN: M DOONEY
DESIGNED: J MUIRSON
REVIEWED: -

FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED

PROJECT	KIWI PROPERTY GROUP LIMITED
TITLE	DRURY CENTRE PROJECT GEOTECHNICAL INVESTIGATION LOCATIONS GIS SHEET 5 OF 5

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0005	A

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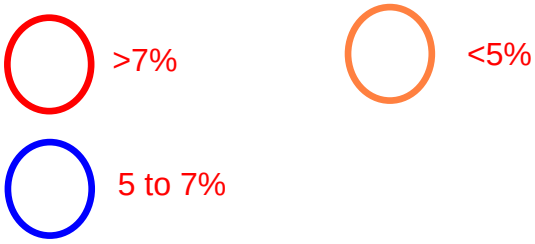
Auckland 1149

Attention: **SAM MacKAY**

Location of these test results are shown on the site investigation plans above.

DETECTION OF THE PRESENCE OF ALLOPHANE



Dear Sam,

Re: DRURY CENTRE PROJECT
Report Number: 64121#L/Allophane

The following table presents the results of 'Detection of the Presence of Allophane in Soils' testing at BGL of soil samples delivered to this laboratory on the 29th of January 2021.

The samples were tested in accordance with the following standard:

Detection of Presence of Allophane in Soils: NZS4402:1986:Test 3.4

Borehole Number	Sample Number	Depth (m)	Allophane Content
TP001	BULK	0.80 – 1.20	> 7%
TP002	BULK	0.50 – 0.90	> 7%
TP003	BULK	0.25 – 0.80	> 7%
TP003	BULK	1.60 – 1.90	> 7%
TP004	BULK	0.60 – 1.10	> 7%
TP004	BULK	2.00 – 2.50	> 7%
TP005	BULK	2.10 – 2.40	> 7%
TP006	BULK	1.80 – 2.10	> 7%
TP008	BULK	2.30 – 2.70	> 7%
TP009	BULK	2.40 – 2.80	> 7%

Borehole Number	Sample Number	Depth (m)	Allophane Content
TP010	BULK	1.50 – 1.80	< 5%
TP011	BULK	2.20 – 2.50	< 5%
TP014	BULK	1.70 – 2.80	< 5%
TP015	BULK	1.20 – 1.80	5 – 7%
TP017	BULK	2.20 – 2.50	5 – 7%
TP019	BULK	0.25 – 0.75	5 – 7%
TP023	BULK	0.75 – 3.00	< 5%
TP024	BULK	1.10 – 1.80	> 7%
TP025	BULK	0.70 – 1.50	< 5%
TP029	BULK	0.70 – 1.80	> 7%
TP029	BULK	1.80 – 2.40	< 5%
TP031	BULK	0.60 – 1.80	< 5%
TP032	BULK	0.70 – 2.00	< 5%
BH007	BULK	2.00 – 2.50	< 5%

Please note that the test results relate only to the samples as-received, and relate only to the samples under test. Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Signatory (Assistant Laboratory Manager)
Babbage Geotechnical Laboratory

ACCREDITED
IANZ
TESTING LABORATORY
№ 126

East Tamaki Laboratory

Coffey Services (NZ) Limited

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coffey
A TETRA TECH COMPANY

Material Test Report

Report No: ETAM17S-00117-1
Issue No: 1

Client: ENGEO Limited
PO Box 305136, Triton Plaza
Auckland 0757

Principal:
Project No.: 773-ETAM00143AA
Project Name: 13451 - ENGEO Testing
Lot No.: - **TRN:** -

Tests indicated as not accredited are outside the scope of the laboratory's accreditation.
{This document may not be altered or reproduced except in full. This report relates only to the positions tested.}

IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID: ETAM17S-00117
Client Sample: -
Date Sampled: 21/12/2016
Source: Unknown (Sampled by Client)
Material: Disturbed Soil
Specification: No Specification
Sampling Method: Unknown (Not IANZ Endorsed)
Project Location: 13451
Sample Location: BH01
0.5 - 0.6 m

Test Results

Description	Method	Result	Limits
Allophane Content	NZS 4402:1986 Test 3.4	>7%	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

East Tamaki Laboratory

Coffey Services (NZ) Limited

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Fax: +64 9 272 3378

coffey
A TETRA TECH COMPANY

Material Test Report

Report No: ETAM17S-00119-1
Issue No: 1

Client: ENGEO Limited
PO Box 305136, Triton Plaza
Auckland 0757

Principal:
Project No.: 773-ETAM00143AA
Project Name: 13451 - ENGEO Testing
Lot No.: - **TRN:** -

Tests indicated as not accredited are outside the scope of the laboratory's accreditation.
{This document may not be altered or reproduced except in full. This report relates only to the positions tested.}

IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID: ETAM17S-00119
Client Sample: -
Date Sampled: 21/12/2016
Source: Unknown (Sampled by Client)
Material: Disturbed Soil
Specification: No Specification
Sampling Method: Unknown (Not IANZ Endorsed)
Project Location: 13451
Sample Location: BH02
0.5 m

Test Results

Description	Method	Result	Limits
Allophane Content	NZS 4402:1986 Test 3.4	5 - 7 %	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

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coffey
A TETRA TECH COMPANY

Material Test Report

Report No: ETAM17S-00120-1
Issue No: 1

Client: ENGEO Limited
PO Box 305136, Triton Plaza
Auckland 0757

Principal:
Project No.: 773-ETAM00143AA
Project Name: 13451 - ENGEO Testing
Lot No.: - **TRN:** -

IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID: ETAM17S-00120
Client Sample: -
Date Sampled: 21/12/2016
Source: Unknown (Sampled by Client)
Material: Disturbed Soil
Specification: No Specification
Sampling Method: Unknown (Not IANZ Endorsed)
Project Location: 13451
Sample Location: BH03

Test Results

Description	Method	Result	Limits
Allophane Content	NZS 4402:1986 Test 3.4	5 - 7 %	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

East Tamaki Laboratory

Coffey Services (NZ) Limited

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PO Box 58877, Botany, Manukau NZ 2163

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coffey
A TETRA TECH COMPANY

Material Test Report

Report No: ETAM17S-00122-1
Issue No: 1

Client:	ENGEO Limited PO Box 305136, Triton Plaza Auckland 0757
Principal:	
Project No.:	773-ETAM00143AA
Project Name:	13451 - ENGEO Testing
Lot No.:	-
TRN:	-

IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID:	ETAM17S-00122
Client Sample:	-
Date Sampled:	21/12/2016
Source:	Unknown (Sampled by Client)
Material:	Disturbed Soil
Specification:	No Specification
Sampling Method:	Unknown (Not IANZ Endorsed)
Project Location:	13451
Sample Location:	HA11 0.4 m

Test Results

Description	Method	Result	Limits
Allophane Content	NZS 4402:1986 Test 3.4	5 - 7 %	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

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Please reply to: W.E. Campton

Aurecon New Zealand Limited
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Newmarket
Auckland 1149

Attention: **SAM MacKAY**

Job Number: 64121#L
BGL Registration Number: 2884
Checked by: WEC

23rd February 2021

ATTERBERG LIMITS & LINEAR SHRINKAGE TESTING

Dear Sam,

Re: DRURY CENTRE PROJECT
Report Number: 64121#L/AL

The following report presents the results of Atterberg Limits & Linear Shrinkage testing at BGL of soil samples delivered to this laboratory on the 29th of January 2021. Test results are summarised below, with pages 3 & 4 showing where the samples plot on the Unified Soil Classification System (Casagrande) Chart. Test standards used were:

Water Content:	NZS4402:1986:Test 2.1
Liquid Limit:	NZS4402:1986:Test 2.2
Plastic Limit:	NZS4402:1986:Test 2.3
Plasticity Index:	NZS4402:1986:Test 2.4
Linear Shrinkage:	NZS4402:1986:Test 2.6

Test Pit / Borehole Number	Sample Number	Depth (m)	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	Linear Shrinkage (%)
TP003	BULK	0.25 – 0.80	53.3	104	42	62	22
TP004	BULK	2.00 –2.50	47.3	83 ◆	51 ◆	32 ◆	21 ◆
TP005	BULK	2.10 – 2.40	46.9	75	50	25	18
TP006	BULK	1.80 – 2.10	39.3	68 ◆	44 ◆	24 ◆	16 ◆
TP008	BULK	2.30 – 2.70	43.5	74	36	38	18
TP010	BULK	1.50 – 1.80	43.0	74	33	41	19
TP014	BULK	1.70 – 2.80	51.6	97	46	51	21

◆ = The soil fraction passing a 425μm sieve was used for the liquid limit, plastic limit and linear shrinakge tests.

Test Pit / Borehole Number	Sample Number	Depth (m)	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	Linear Shrinkage (%)
TP017	BULK	2.20 – 2.50	45.1	77	48	29	16
TP019	BULK	0.25 – 0.75	33.3	79	34	45	20
TP025	BULK	0.70 – 1.50	40.2	83	37	46	20
TP029	BULK	1.80 – 2.40	32.6	82	27	55	23
TP031	BULK	0.60 – 1.80	49.3	66	33	33	14
TP032	BULK	0.70 – 2.00	53.6	109	33	76	26
BH007	BAG	2.00 – 2.50	74.3	100	42	58	not tested
BH008	BAG	8.00 – 8.50	92.6	131	42	89	not tested
BH015	BAG	8.50 – 9.00	58.9	85	25	60	not tested
BH016	BAG	11.00 – 11.50	83.8	108	33	75	not tested

The whole soil was used for all water content tests (the soils were in a natural state), and for the liquid limit, plastic limit and linear shrinkage tests without a diamond beside them. The soil fraction passing a 425µm sieve was used for the liquid limit, plastic limit and linear shrinakge tests with a diamond (◆) beside them. The soil was wet up and dried where required for the liquid limit, plastic limit and linear shrinkage tests.

As per the reporting requirements of NZS4402: 1986: Test 2.1: water content is reported to two significant figures for values below 10%, and to three significant figures for values of 10% or greater. Test 2.2: liquid limit, test 2.3: plastic limit, and test 2.6: linear shrinkage are reported to the nearest whole number.

Please note that the test results relate only to the samples as-received, and relate only to the samples under test. Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Signatory (Assistant Laboratory Manager)
Babbage Geotechnical Laboratory

ACCREDITED
IANZ
TESTING LABORATORY
№ 126

Babbage Geotechnical Laboratory	Job Number: 64121#L	Sheet 1 of 1	Page 3 of 4
	Reg. Number: 2884	Version No:	6
	Report No: 64121#L/AL	Version Date:	September 2018
	Project:	DRURY CENTRE PROJECT	

DETERMINATION OF THE LIQUID LIMIT, PLASTIC LIMIT & THE PLASTICITY INDEX

Test Methods: NZS4402: 1986: Test 2.2, Test 2.3 and Test 2.4

Tested By:	JW/TH/CB/WC	February 2021
Compiled By:	JF	23/02/2021
Checked By:	JF	23/02/2021

SUMMARY OF TESTING

Borehole Number	Sample Number	Depth (m)	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification Based on USCS Chart Below
TP003	BULK	0.25 - 0.80	104	42	62	CH
TP004	BULK	2.00 - 2.50	83	51	32	MH
TP005	BULK	2.10 - 2.40	75	50	25	MH
TP006	BULK	1.80 - 2.10	68	44	24	MH
TP008	BULK	2.30 - 2.70	74	36	38	MH
TP010	BULK	1.50 - 1.80	74	33	41	CH
TP014	BULK	1.70 - 2.80	97	46	51	MH
TP017	BULK	2.20 - 2.50	77	48	29	MH
TP019	BULK	0.25 - 0.75	79	34	45	CH
TP025	BULK	0.70 - 1.50	83	37	46	CH / MH

The chart below & soil classification terminology is taken from ASTM D2487-17 "Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)", January 2018, & is based on the classification scheme developed by A. Casagrande in the 1940's (Casagrande, A., 1948: Classification and identification of soil. Transactions of the American Society of Civil Engineers, v. 113, p. 901-930). The chart below & the soil classification given in the table above are included for your information only, and are not included in the IANZ endorsement for this report.

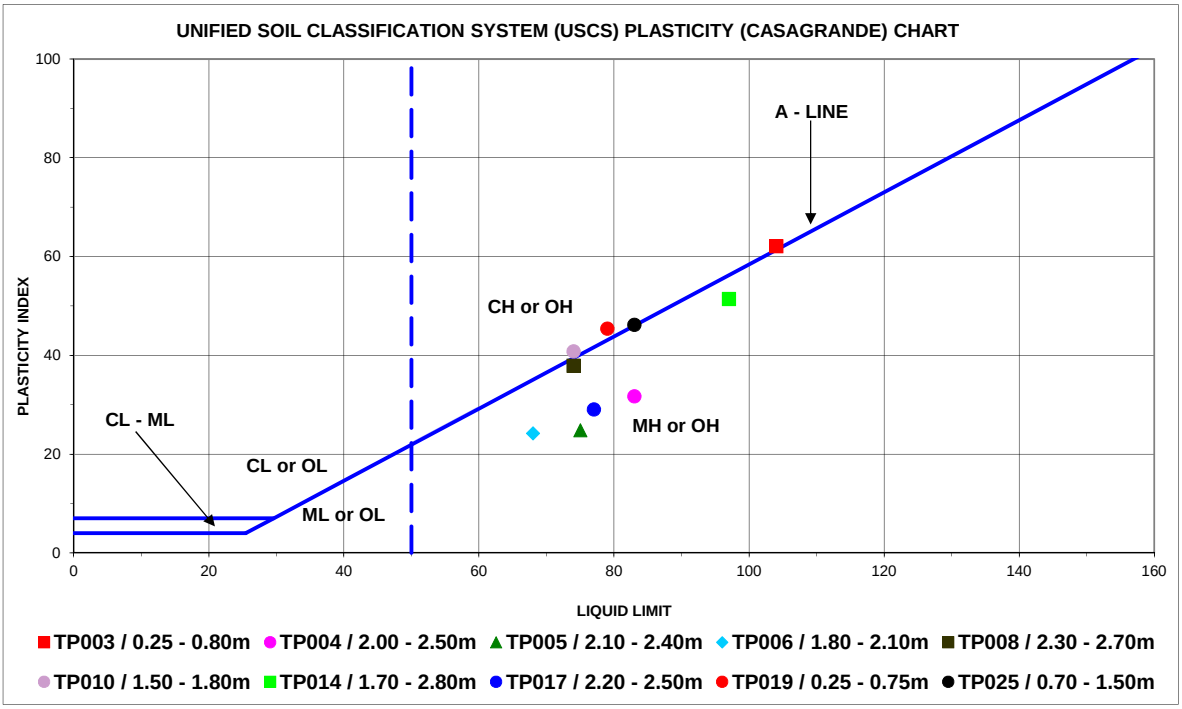

CHART LEGEND

CL = CLAY, low plasticity ('lean' clay)
OL = ORGANIC CLAY or ORGANIC SILT, low liquid limit
ML = SILT, low liquid limit
CL - ML = SILTY CLAY
CH = CLAY, high plasticity ('fat' clay)
OH = ORGANIC CLAY or ORGANIC SILT, high liquid limit
MH = SILT, high liquid limit ('elastic silt')

Babbage Geotechnical Laboratory	Job Number: 64121#L	Sheet 1 of 1	Page 4 of 4
	Reg. Number: 2884	Version No:	6
	Report No: 64121#L/AL	Version Date:	September 2018
	Project:	DRURY CENTRE PROJECT	

DETERMINATION OF THE LIQUID LIMIT, PLASTIC LIMIT & THE PLASTICITY INDEX

Test Methods: NZS4402: 1986: Test 2.2, Test 2.3 and Test 2.4

Tested By:	JW/TH/CB/WC	February 2021
Compiled By:	JF	23/02/2021
Checked By:	JF	23/02/2021

SUMMARY OF TESTING

Borehole Number	Sample Number	Depth (m)	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification Based on USCS Chart Below
TP029	BULK	1.80 - 2.40	82	27	55	CH
TP031	BULK	0.60 - 1.80	66	33	33	CH / MH
TP032	BULK	0.70 - 2.00	109	33	76	CH
BH007	BAG	2.00 - 2.50	100	42	58	CH / MH
BH008	BAG	8.00 - 8.50	131	42	89	CH
BH015	BAG	8.50 - 9.00	85	25	60	CH
BH016	BAG	11.00 - 11.50	108	33	75	CH

The chart below & soil classification terminology is taken from ASTM D2487-17 "Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)", January 2018, & is based on the classification scheme developed by A. Casagrande in the 1940's (Casagrande, A., 1948: Classification and identification of soil. Transactions of the American Society of Civil Engineers, v. 113, p. 901-930). The chart below & the soil classification given in the table above are included for your information only, and are not included in the IANZ endorsement for this report.

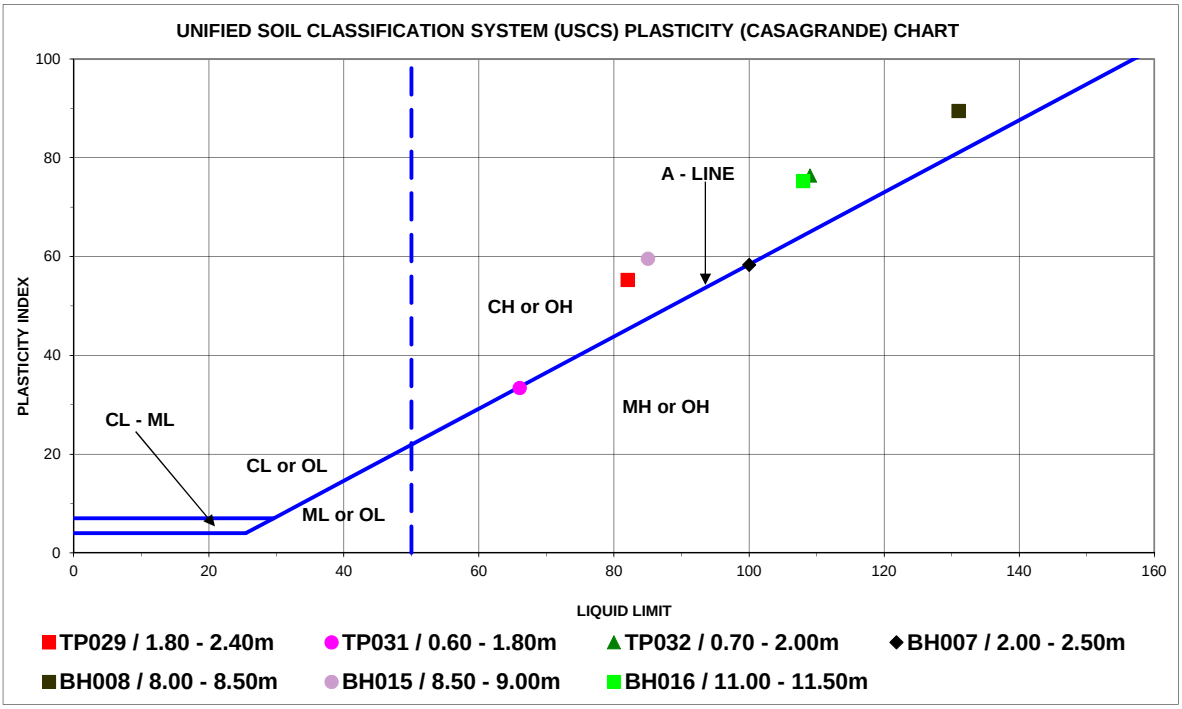

CHART LEGEND

CL = CLAY, low plasticity ('lean' clay)
CH = CLAY, high plasticity ('fat' clay)
OL = ORGANIC CLAY or ORGANIC SILT, low liquid limit
OH = ORGANIC CLAY or ORGANIC SILT, high liquid limit
ML = SILT, low liquid limit
MH = SILT, high liquid limit ('elastic silt')
CL - ML = SILTY CLAY

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Please reply to: W.E. Campton

Aurecon New Zealand Limited
PO Box 9762
Newmarket
Auckland 1149

Attention: **SAM MacKAY**

Job Number: 64121#L
BGL Registration Number: 2884
Checked by: WEC

1st March 2021

ATTERBERG LIMITS & WATER CONTENT TESTING

Dear Sam,

Re: DRURY CENTRE PROJECT
Report Number: 64121#L/AL2

The following report presents the results of Atterberg Limits & water content testing at BGL of soil samples delivered to this laboratory on the 23rd February 2021. Test results are summarised below, with page 3 showing where the samples plot on the Unified Soil Classification System (Casagrande) Chart. Test standards used were:

Water Content:	NZS4402:1986:Test 2.1
Liquid Limit:	NZS4402:1986:Test 2.2
Plastic Limit:	NZS4402:1986:Test 2.3
Plasticity Index:	NZS4402:1986:Test 2.4

Borehole Number	Sample Number	Depth (m)	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
BH014	**BAG**	**18.00 – 18.50**	**96.3**	**130**	**38**	**92**
BH014	**BAG**	**33.00**	**52.0**	limits not carried out		
BH016*	**BAG**	**24.00 – 24.50**	**113**	**173 ◆**	**60 ◆**	**113 ◆**
BH014	**BAG**	**34.50**	**136**	limits not carried out		

◆ = The soil fraction passing a 425μm sieve was used for the liquid limit, plastic limit and linear shrinakge tests.

***Organic soil**

The whole soil was used for all water content tests (the soils were in a natural state), and for the liquid limit and plastic limit tests for BH014 18.00 – 18.50m. The soil fraction passing a 0.425mm sieve was used for the liquid limit and plastic limit tests for sample BH016 24.00 – 24.50m. The soil was wet up and dried where required for the liquid limit and plastic limit tests.

As per the reporting requirements of NZS4402: 1986: Test 2.1: water content is reported to two significant figures for values below 10%, and to three significant figures for values of 10% or greater. Test 2.2: liquid limit and test 2.3: plastic limit are reported to the nearest whole number.

Please note that the test results relate only to the samples as-received, and relate only to the samples under test.

Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Signatory (Assistant Laboratory Manager)
Babbage Geotechnical Laboratory

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№ 126

Babbage Geotechnical Laboratory	Job Number: 64121#L	Sheet 1 of 1	Page 3 of 3
	Reg. Number: 2884	Version No:	6
	Report No: 64121#L/AL2	Version Date:	September 2018
	Project:	DRURY CENTRE PROJECT	

DETERMINATION OF THE LIQUID LIMIT, PLASTIC LIMIT & THE PLASTICITY INDEX

Test Methods: NZS4402: 1986: Test 2.2, Test 2.3 and Test 2.4

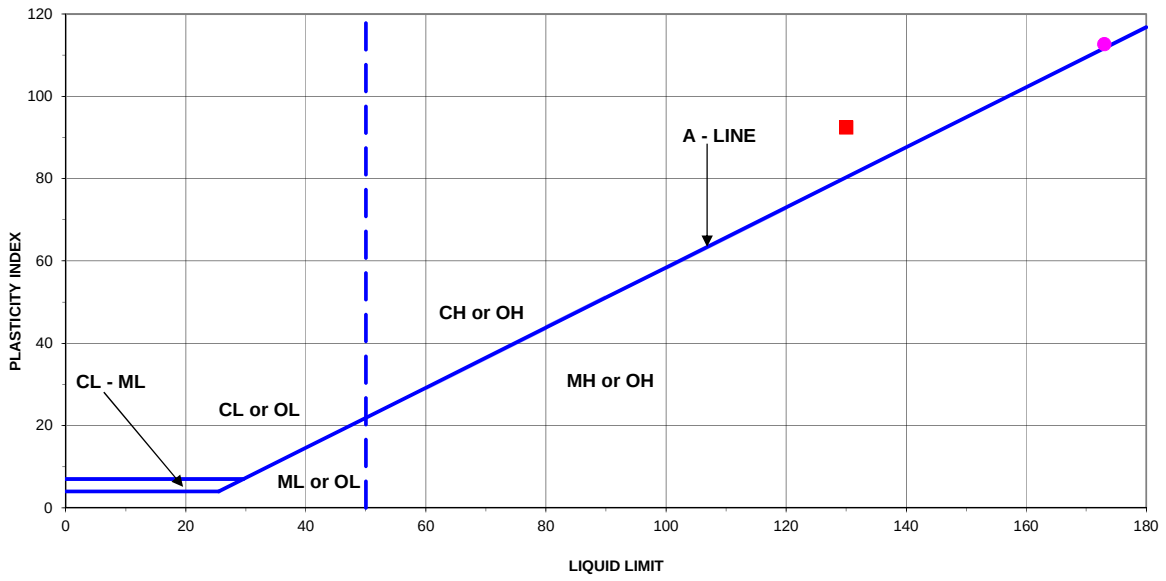
Tested By:	JW / CBH	February 2021
Compiled By:	JF	1/03/2021
Checked By:	JF	1/03/2021

SUMMARY OF TESTING

Borehole Number	Sample Number	Depth (m)	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification Based on USCS Chart Below
BH014	BAG	18.00 - 18.50	130	38	92	CH
BH016	BAG	24.00 - 24.50	173	60	113	OH - ORGANIC CLAY

The chart below & soil classification terminology is taken from ASTM D2487-17 "Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)", January 2018, & is based on the classification scheme developed by A. Casagrande in the 1940's (Casagrande, A., 1948: Classification and identification of soil. Transactions of the American Society of Civil Engineers, v. 113, p. 901-930). The chart below & the soil classification given in the table above are included for your information only, and are not included in the IANZ endorsement for this report.

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) PLASTICITY (CASAGRANDE) CHART



■ **BH014 / BAG / 18.00 - 18.50m** ● **BH016 / 24.00 - 24.50m**

CHART LEGEND

CL = CLAY, low plasticity ('lean' clay)
OL = ORGANIC CLAY or ORGANIC SILT, low liquid limit
ML = SILT, low liquid limit
CL - ML = SILTY CLAY
CH = CLAY, high plasticity ('fat' clay)
OH = ORGANIC CLAY or ORGANIC SILT, high liquid limit
MH = SILT, high liquid limit ('elastic silt')

Babbage Geotechnical Laboratory
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Telephone
E-mail

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New Zealand
64-9-367 4954
wec@babbage.co.nz

Please reply to: W.E. Campton

Aurecon New Zealand Limited
PO Box 9762
Newmarket
Auckland 1149

Attention: **SAM MacKAY**

Job Number: 64121#L
BGL Registration Number: 2884
Checked by: WEC

16th February 2021

SOIL WATER CONTENT TESTING

Dear Sam,

Re: DRURY CENTRE PROJECT
Report Number: 64121#L/WC

The following page presents the results of water content testing at BGL of soil samples delivered to this laboratory on the 29th of January 2021. These samples were tested in accordance with the following standard:

Water Content: NZS4402:1986:Test 2.1

As per the reporting requirements of NZS4402: 1986: Test 2.1: water content is reported to two significant figures for values below 10%, and to three significant figures for values of 10% or greater.

Please note that the test results relate only to the samples as-received, and relate only to the samples under test.

Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Signatory (Assistant Laboratory Manager)
Babbage Geotechnical Laboratory

ACCREDITED
IANZ
TESTING LABORATORY
№ 126

BGL Babbage Geotechnical Laboratory	Job Number:	64121#L	Sheet 1 of 1	Page 2 of 2
	Reg. Number:	2884	Version No:	2
	Report Number:	64121#L/WC	Issue Date:	July 2017
	PROJECT:	DRURY CENTRE PROJECT		

DETERMINATION OF THE WATER CONTENT

Test Method: NZS4402: 1986: Test 2.1

Tested By:	JF	11/02/2021
Compiled By:	JF	15/02/2021
Checked By:	WEC	15/02/2021

BOREHOLE NUMBER	SAMPLE NUMBER	DEPTH (m)	WATER CONTENT (%)
TP001	BULK	0.80 - 1.20	61.9
TP002	BULK	0.50 - 0.90	40.0
TP002	BULK	0.90 - 2.50	69.7
TP003	BULK	1.60 - 1.90	73.9
TP011	BULK	2.20 - 2.50	27.1
TP015	BULK	1.20 - 1.80	69.9
TP019	BULK	1.00 - 2.20	49.7
TP024	BULK	1.10 - 1.80	56.0
TP032	BULK	2.00 - 3.00	73.6
BH007	BAG	6.00 - 6.50	62.6

BOREHOLE NUMBER	SAMPLE NUMBER	DEPTH (m)	WATER CONTENT (%)

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Attention: **CHRIS GOODIN**

Job Number: 64746#L
BGL Registration Number: 2931
Checked by: WEC

27th September 2022

ATTERBERG LIMITS TESTING

Dear Sir,

Re: DRURY PRECINCT

Report Number: 64746#L/AL Drury Precinct

The following report presents the results of Atterberg Limits testing at BGL of soil samples delivered to this laboratory on the 9th of September 2022. Test results are summarised below, with page 3 showing where the samples plot on the Unified Soil Classification System (Casagrande) Chart.

Test standards used were:

Water Content:	NZS4402:1986:Test 2.1
Liquid Limit:	NZS4402:1986:Test 2.2
Plastic Limit:	NZS4402:1986:Test 2.3
Plasticity Index:	NZS4402:1986:Test 2.4

Borehole Number	Sample Number	Depth (m)	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
Saddle Centre	1	0.50	58.6	90	46	44
Saddle Centre	2	1.00	42.8	89	42	47
Saddle with Slope	3	0.50	48.6	84	38	46
Saddle with Slope	4	1.00	64.3	105	60	45
SE Low	5	1.00	47.5	77 ◆	34 ◆	43 ◆
SE High	6	1.00	63.2	104	44	60

◆ = ***The soil fraction passing a 425μm sieve was used for the liquid limit and plastic limit tests.***

The whole soils were used for the water content tests (the soils were in a natural state), and for the liquid limit and plastic limit tests without a diamond beside them. The soil fraction passing a 0.425mm sieve was used for the liquid limit and plastic limit tests with a diamond (◆) beside them. The soils were wet up and dried where required for the liquid limit and plastic limit tests.

As per the reporting requirements of NZS4402: 1986: Test 2.1: water content is reported to two significant figures for values below 10%, and to three significant figures for values of 10% or greater. Test 2.2: liquid limit and test 2.3: plastic limit are reported to the nearest whole number.

Please note that the test results relate only to the samples as-received, and relate only to the samples under test.

Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Key Technical Person
Assistant Laboratory Manager
Babbage Geotechnical Laboratory

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№ 126

Babbage Geotechnical Laboratory

Project: DRURY PRECINCT

DETERMINATION OF THE LIQUID LIMIT, PLASTIC LIMIT & THE PLASTICITY INDEX

Test Methods: NZS4402: 1986: Test 2.2, Test 2.3 and Test 2.4

Tested By:	JW	September 2022
Compiled By:	JF	27/09/2022
Checked By:	JF	27/09/2022

SUMMARY OF TESTING

Borehole Number	Sample Number	Depth (m)	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification Based on USCS Chart Below
Saddle Centre	1	0.50	90	46	44	MH
Saddle Centre	2	1.00	89	42	47	MH
Saddle with Slope	3	0.50	84	38	46	MH
Saddle with Slope	4	1.00	105	60	45	MH
SE Low	5	1.00	77	34	43	CH
SE High	6	1.00	104	44	60	MH

The chart below & soil classification terminology is taken from ASTM D2487-17^{e1} "Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)", April 2020, & is based on the classification scheme developed by A. Casagrande in the 1940's (Casagrande, A., 1948: Classification and identification of soil. Transactions of the American Society of Civil Engineers, v. 113, p. 901-930). The chart below & the soil classification given in the table above are included for your information only, and are not included in the IANZ endorsement for this report.

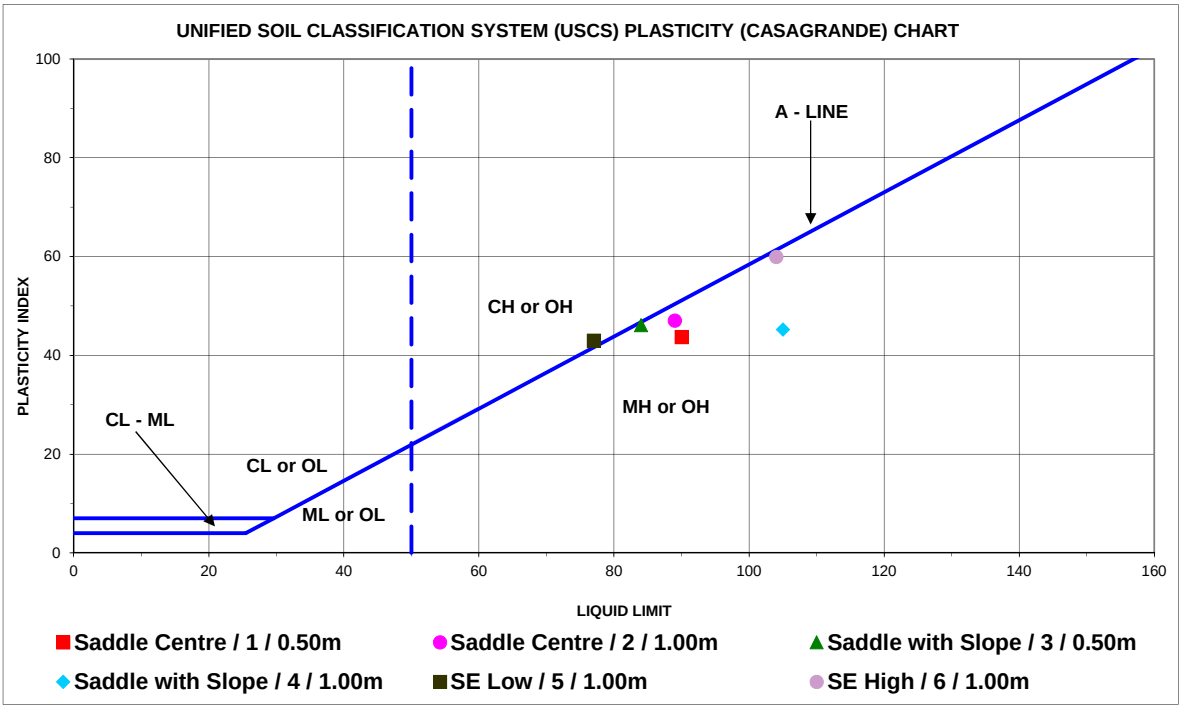

CHART LEGEND

CL = CLAY, low plasticity ('lean' clay)
CH = CLAY, high plasticity ('fat' clay)
OL = ORGANIC CLAY or ORGANIC SILT, low liquid limit
OH = ORGANIC CLAY or ORGANIC SILT, high liquid limit
ML = SILT, low liquid limit
MH = SILT, high liquid limit ('elastic silt')
CL - ML = SILTY CLAY

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Auckland 1149

Attention: **SAM MacKAY**

Job Number: 64121#L
BGL Registration Number: 2884
Checked by: WEC

23rd February 2021

DRY DENSITY / WATER CONTENT RELATIONSHIP (COMPACTION CURVE) TESTING

Dear Sam,

Re: DRURY CENTRE PROJECT
Report Number: 64121#L/CC

The following report presents the results of compaction curve testing at BGL of bulk soil samples delivered to this laboratory on the 29th of January 2021. Test results are summarised below, with the following pages showing graphs and detailed results.

A single shear vane test was carried out on each compacted sample while it was still in the proctor mould, and these results are included on the results tables and water content / density graphs. The shear vane results are included for your information only, and are not included in the IANZ endorsement for this report.

Test standards used were:

Water Content:	NZS4402:1986:Test 2.1
NZ Standard Compaction:	NZS4402:1986:Test 4.1.1
Vane Shear Strength:	NZ Geotechnical Society Guideline 2001

Sample Details	Maximum Dry Density (t/m^3)	Optimum Water Content (%)	Natural Water Content (%)
TP005 / BULK / 2.10 – 2.40m	**1.17**	**44**	**46.9**
	SILT, minor fine gravel, moderately plastic, mottled grey & reddish brown.		

Note that sample descriptions above are not part of BGL IANZ Accreditation.

Sample Details	Maximum Dry Density (t/m^3)	Optimum Water Content (%)	Natural Water Content (%)
TP008 / BULK / 2.30 – 2.70m	**1.24**	**40**	**43.5**
	SILT, clayey, minor fine gravel, moderately plastic, brown with orangish red mottles, slightly moist.		
TP017 / BULK / 2.20 – 2.50m	**1.21**	**44**	**45.1**
	SILT, moderately plastic, orange, slightly moist, very friable		
TP023 / BULK / 0.75 – 3.00m	**1.14**	**43**	**59.0**
	SILT to COARSE GRAVEL (completely to highly weathered basalt scoria), slightly plastic, red, grey & brown.		
TP025 / BULK / 1.50 – 3.00m	**1.17**	**44**	**55.3**
	SILT, clayey, gravelly, slightly plastic, reddish brown, moist.		

Note that sample descriptions above are not part of BGL IANZ Accreditation.

As per the reporting requirements of NZS4402: 1986: Test 2.1: water content is reported to two significant figures for values below 10%, and to three significant figures for values of 10% or greater. As per the reporting requirements of NZS4402: 1986: Test 4.1.1: New Zealand Standard Compaction Test, maximum dry density is reported to the nearest $0.01t/m^3$, optimum water content is reported to the nearest 0.2% for values below 5%, to the nearest 0.5% for values from 5 to 10%, and to the nearest whole number for values greater than 10%.

For calculating the air voids percentages a solid density of $2.65t/m^3$ was assumed for TP005, a solid density of $2.61t/m^3$ was assumed for TP008, a solid density of $2.72t/m^3$ was assumed for TP017, a solid density of $2.76t/m^3$ was assumed for TP023, and a solid density of $2.71t/m^3$ was assumed for TP025. Please note that these assumed values are not part of the IANZ endorsement for this report.

Please note that the test results relate only to the samples as-received, and relate only to the samples under test. Thank you for the opportunity to carry out this testing. If you have any queries regarding the content of this report please contact the person authorising this report below at your convenience.

Yours faithfully,

Justin Franklin
Signatory (Assistant Laboratory Manager)
Babbage Geotechnical Laboratory

ACCREDITED
IANZ
TESTING LABORATORY
№ 126

Babbage Geotechnical Laboratory	Job No:	64121#L	Reg. No:	2884	Version No: 3
	Report No:	64121#L/CC			Issue Date: Jul-17
	PROJECT:	DRURY CENTRE PROJECT			

Determination of the Dry Density / Water Content Relationship by Standard Compaction

Test Method: NZS4402: 1986: Test 4.1.1

Tested By:	WEC / JW	Feb 2021
Compiled By:	WEC	23/02/2021
Checked By:	JF	23/02/2021

Sample No: TP005 / BULK **Sample Depth: 2.10 - 2.40m**

Sample History: Air-dried and wetted from natural water content

Compaction Used: New Zealand Standard Compaction

Test Performed On: Whole Soil / ~~Fraction Passing the 19mm Sieve~~

Solid Density of Soil Particles: 2.65 t/m^3 (~~measured~~ / assumed)

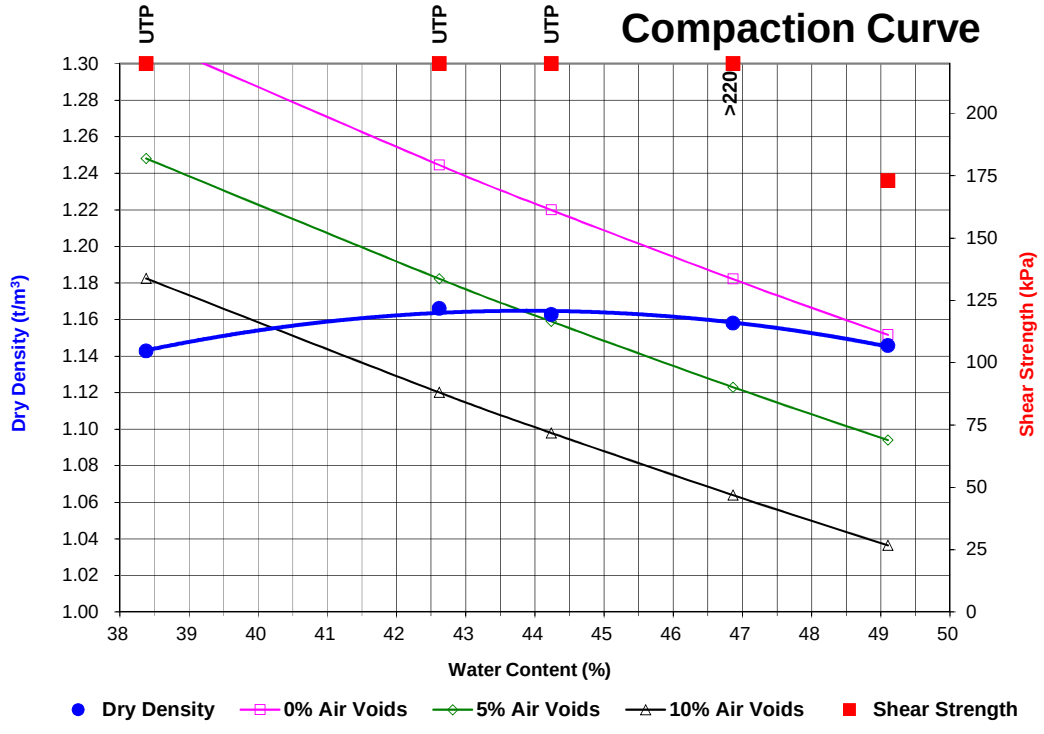
Natural Water Content (%): 46.9

TEST RESULTS

Water Content (%)	38.4	42.6	44.2	46.9	49.1
Bulk Density (t/m^3)	1.58	1.66	1.68	1.70	1.71
Dry Density (t/m^3)	1.14	1.17	1.16	1.16	1.15
Air Voids (%)	13.0	6.3	4.7	2.0	0.5
Shear Strength (kPa)	UTP*	UTP*	UTP*	>220	110

UTP = unable to penetrate sample with the shear vane.

Maximum Dry Density:	1.17 t/m^3	Optimum Water Content:	44 %



Babbage Geotechnical Laboratory	Job No:	64121#L	Reg. No:	2884	Version No: 3
	Report No:	64121#L/CC			Issue Date: Jul-17
	PROJECT:	DRURY CENTRE PROJECT			

Determination of the Dry Density / Water Content Relationship by Standard Compaction

Test Method: NZS4402: 1986: Test 4.1.1

Tested By:	WEC / JW	Feb 2021
Compiled By:	WEC	23/02/2021
Checked By:	JF	23/02/2021

Sample No: TP008 / BULK **Sample Depth: 2.30 - 2.70m**

Sample History: Air-dried and wetted from natural water content

Compaction Used: New Zealand Standard Compaction

Test Performed On: Whole Soil / ~~Fraction Passing the 19mm Sieve~~

Solid Density of Soil Particles: 2.61 t/m^3 (~~measured~~ / assumed)

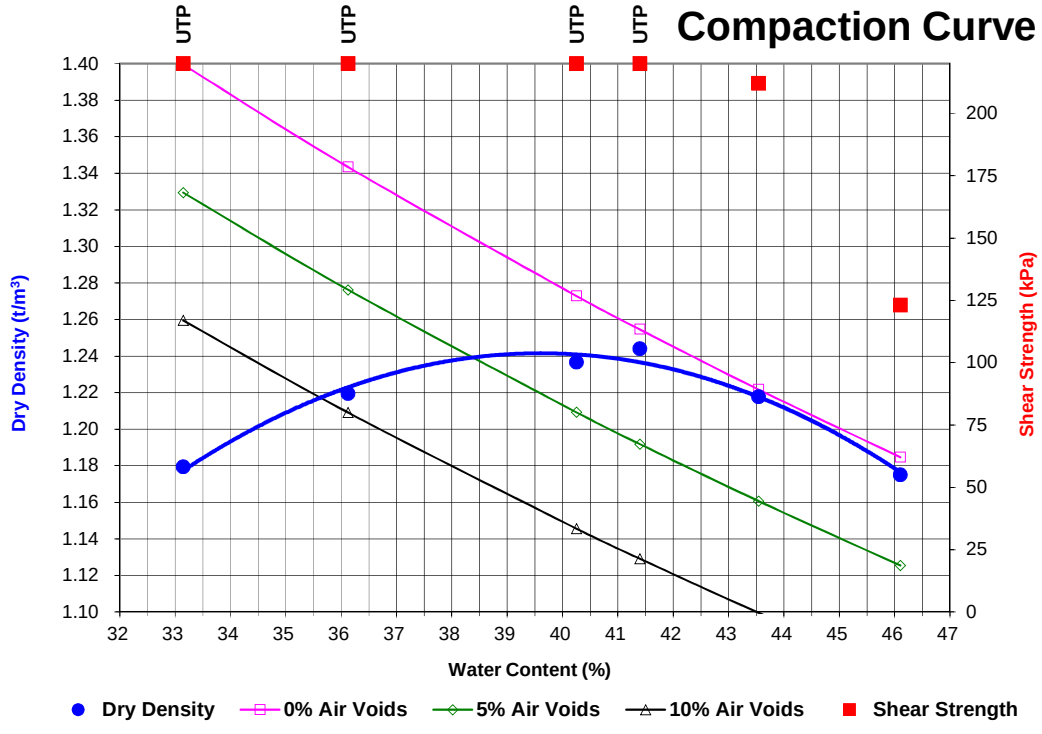
Natural Water Content (%): 43.5

TEST RESULTS

Water Content (%)	33.1	36.1	40.2	41.4	43.5	46.1
Bulk Density (t/m^3)	1.57	1.66	1.73	1.76	1.75	1.72
Dry Density (t/m^3)	1.18	1.22	1.24	1.24	1.22	1.17
Air Voids (%)	15.7	9.2	2.9	0.8	0.3	0.8
Shear Strength (kPa)	UTP*	UTP*	UTP*	UTP*	212	123

UTP = unable to penetrate sample with the shear vane.

Maximum Dry Density:	**1.24 t/m^3**	**Optimum Water Content:**	**40 %**



Determination of the Dry Density / Water Content Relationship by Standard Compaction

Test Method: NZS4402: 1986: Test 4.1.1

Tested By:	WEC / CBH	Feb 2021
Compiled By:	WEC	23/02/2021
Checked By:	JF	23/02/2021

Sample No: TP017 / BULK **Sample Depth: 2.20 - 2.50m**

Sample History: Air-dried and wetted from natural water content

Compaction Used: New Zealand Standard Compaction

Test Performed On: Whole Soil / ~~Fraction Passing the 19mm Sieve~~

Solid Density of Soil Particles: 2.72 t/m^3 (~~measured~~ / assumed)

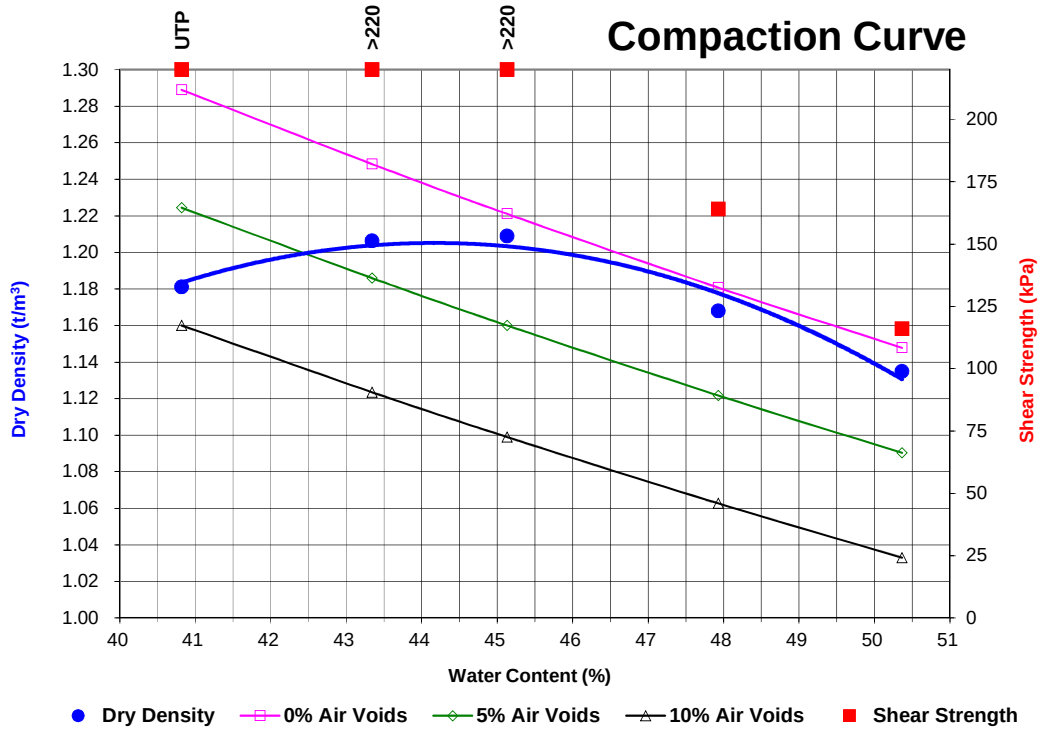
Natural Water Content (%): 45.1

TEST RESULTS

Water Content (%)	40.8	43.3	45.1	47.9	50.4
Bulk Density (t/m^3)	1.66	1.73	1.75	1.73	1.71
Dry Density (t/m^3)	1.18	1.21	1.21	1.17	1.13
Air Voids (%)	8.4	3.4	1.0	1.1	1.1
Shear Strength (kPa)	UTP*	>220	>220	164	116

UTP = unable to penetrate sample with the shear vane.

Maximum Dry Density:	1.21 t/m^3	Optimum Water Content:	44 %



Determination of the Dry Density / Water Content Relationship by Standard Compaction	**Tested By:**	WEC / CBH	Feb 2021
	Compiled By:	WEC	23/02/2021
Test Method: NZS4402: 1986: Test 4.1.1	**Checked By:**	JF	23/02/2021

Sample No: TP023 / BULK **Sample Depth: 0.75 - 3.00m**

Sample History: Air-dried from natural water content

Compaction Used: New Zealand Standard Compaction

Test Performed On: ~~Whole Soil /~~ Fraction Passing the 19mm Sieve

Solid Density of Soil Particles: 2.76 t/m^3 (~~measured~~ / assumed)

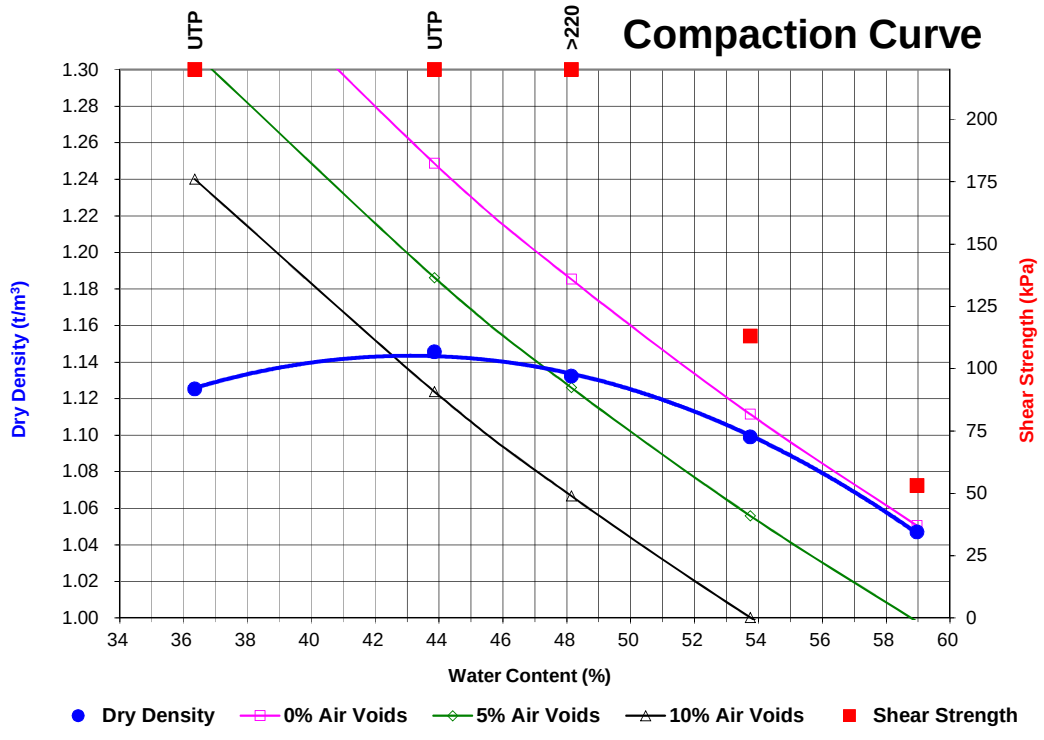
Natural Water Content (%): 59.0

TEST RESULTS

Water Content (%)	36.3	43.9	48.1	53.7	59.0
Bulk Density (t/m^3)	1.53	1.65	1.68	1.69	1.66
Dry Density (t/m^3)	1.13	1.15	1.13	1.10	1.05
Air Voids (%)	18.3	8.3	4.5	1.1	0.3
Shear Strength (kPa)	UTP*	UTP*	>220	113	53

UTP = unable to penetrate sample with the shear vane.

Maximum Dry Density:	1.14 t/m^3	Optimum Water Content:	43 %



BGL Babbage Geotechnical Laboratory	Job No:	64121#L	Reg. No:	2884	Page 7 of 7
					Version No: 3
	Report No:	64121#L/CC			Issue Date: Jul-17
	PROJECT:	DRURY CENTRE PROJECT			

Determination of the Dry Density / Water Content Relationship by Standard Compaction	Tested By:	WEC / JW	Feb 2021
	Compiled By:	WEC	23/02/2021
Test Method: NZS4402: 1986: Test 4.1.1	Checked By:	JF	23/02/2021

Sample No: TP025 / BULK **Sample Depth: 1.50 - 3.00m**

Sample History: Air-dried from natural water content

Compaction Used: New Zealand Standard Compaction

Test Performed On: Whole Soil / ~~Fraction Passing the 19mm Sieve~~

Solid Density of Soil Particles: 2.71 t/m^3 (~~measured~~ / assumed)

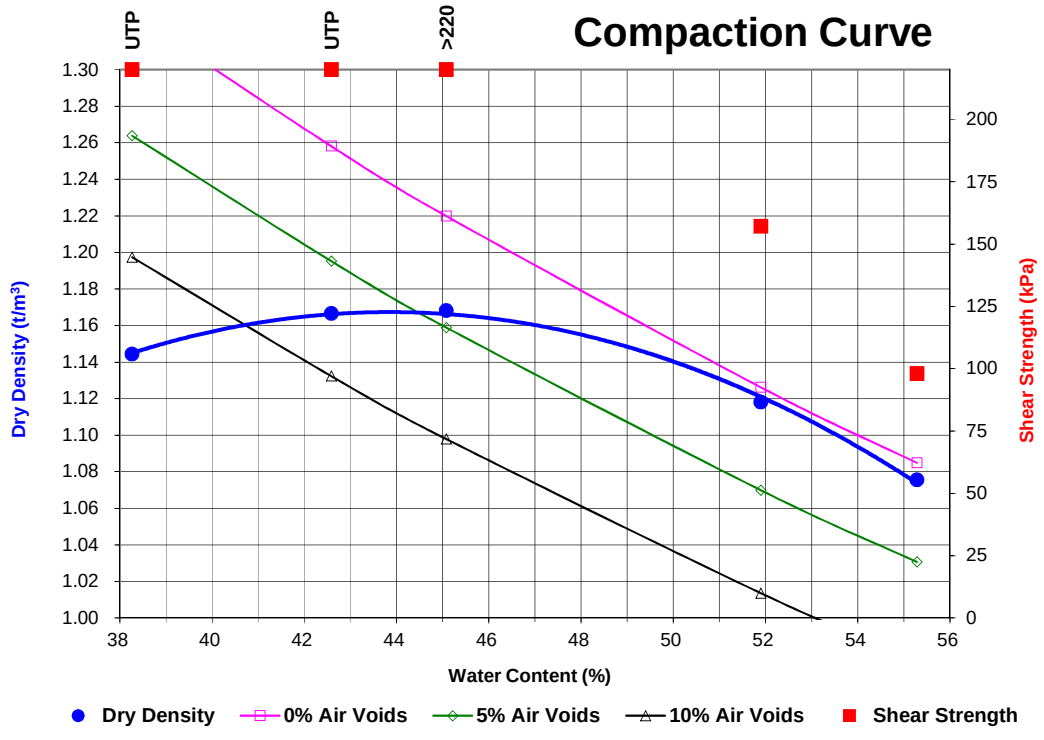
Natural Water Content (%): 55.3

TEST RESULTS

Water Content (%)	38.3	42.6	45.1	51.9	55.3
Bulk Density (t/m^3)	1.58	1.66	1.69	1.70	1.67
Dry Density (t/m^3)	1.14	1.17	1.17	1.12	1.08
Air Voids (%)	14.0	7.3	4.2	0.7	0.9
Shear Strength (kPa)	UTP*	UTP*	>220	157	98

UTP = unable to penetrate sample with the shear vane.

Maximum Dry Density:	1.17 t/m^3	Optimum Water Content:	44 %



APPENDIX E: FIELD TEST DATA

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Auckland, New Zealand
Tel: +64 9 520 6019
www.aurecongroup.com

Client: **Kiwi Property Holdings No. 2 Limited**
Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH01

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417233m	Date started: 23/08/2023	Logged by: DB
Equipment: 50mm Hand Auger	Northing: 774233m	Date completed: 23/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
		T	**0m:** Organic SILT; dark brown. Firm, moist, low plasticity. [TOPSOIL]		**0m: PLACED TOPSOIL**	
		FEc	**0.15m:** SILT with minor clay and gravel; reddish orange. Very stiff, moist, low plasticity. [FILL]	0.3m: ISHSV UTP	**0.15m: FILL SOURCED FROM LOCAL WEATHERED BASALTIC VOLCANIC DEPOSITS**	
			0.5m:...dark orange, flecked pink and white.	0.6m: ISHSV 108/38 kPa		
1			**0.9m:** Silty CLAY with trace gravel; brown, mottled orange. Very stiff, moist, high plasticity. Gravel, fine, subrounded.	0.9m: ISHSV UTP		1
			1.1m: Clayey SILT with trace gravel; light reddish brown. Very stiff, moist, low plasticity. Gravel, fine, subrounded.	1.2m: ISHSV UTP		
			1.5m: SILT with minor clay; orange brown. Very stiff, moist, low plasticity.	1.5m: ISHSV 151/86 kPa		
			1.7m: Silty CLAY; brownish orange. Very stiff, moist, high plasticity.			
2		VRb	**1.8m:** SILT with minor clay, trace gravel and organics; greyish orange, speckled brown. Very stiff, moist, low plasticity. Gravel, fine, rounded. Organics, disseminated, fibrous. [COMPLETELY WEATHERED BASALT LAVA]	1.8m: ISHSV 173/84 kPa	**1.8m: SOUTH AUCKLAND VOLCANIC FIELD**	2
3			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 189+ kPa		3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 23/08/23 10:30 | m | Hole Dry

HSV Serial No: 3178 Correction Factor: 1.351

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Auckland, New Zealand
Tel: +64 9 520 6019
www.aurecongroup.com

Client: **Kiwi Property Holdings No. 2 Limited**
Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH02

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417256m	Date started: 23/08/2023	Logged by: GMR
Equipment: 50mm Hand Auger	Northing: 774182m	Date completed: 23/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
		T	**0m:** SILT with minor clay; dark greyish brown. Firm, moist, low plasticity. [TOPSOIL]		**0m: TOPSOIL**	
		FEc	**0.15m:** SILT with minor clay and trace gravel; brownish orange. Very stiff, moist, low plasticity. Gravel, fine, rounded. [FILL]	0.3m: ISHSV 189+ kPa	**0.15m: FILL SOURCED FROM LOCAL WEATHERED BASALTIC VOLCANIC DEPOSITS**	
			0.4m:...mottled pink and white.	0.6m: ISHSV 189+ kPa		
			0.7m: Silty CLAY; brownish orange, mottled pink and white. Very stiff, moist, high plasticity.			
1			**0.9m:** SILT with some clay; reddish orange, speckled white. Very stiff, moist, high plasticity.	0.9m: ISHSV 170/89 kPa		1
			1m:...mottled reddish pink.			
			1.1m: Silty CLAY; brownish orange. Very stiff, moist, high plasticity.	1.2m: ISHSV 168/130 kPa		
			1.3m: SILT with some clay; reddish orange. Very stiff, moist, low plasticity.			
			1.5m: CLAY with some silt; light brown. Very stiff, moist, high plasticity.	1.5m: ISHSV 189+ kPa		
			1.6m to 1.7m:...pink, mottled white.	1.8m: ISHSV 189+ kPa		
2			**1.9m to 2m:**...reddish pink, speckled white.			2
			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 181/81 kPa		
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 23/08/23 13:00 | m | Hole Dry

HSV Serial No: 3178 Correction Factor: 1.351

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Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH03

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417251m	Date started: 23/08/2023	Logged by: CSR
Equipment: 50mm Hand Auger	Northing: 774115m	Date completed: 23/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
		T	**0m:** SILT with some clay and minor gravel; brown. Firm, moist, low plasticity. Gravel, fine, subrounded. [TOPSOIL]		**0m: PLACED TOPSOIL**	
		VAa	**0.2m:** Clayey SILT with trace sand; yellowish brown, mottled grey, pink and green. Hard, moist, low plasticity. Sand, fine. [COMPLETELY WEATHERED ASH] **0.35m:**...trace gravel, fine, grey, subrounded, highly weathered. **0.4m:**...grey, mottled pink.	0.3m: ISHSV UTP	**0.2m: SOUTH AUCKLAND VOLCANIC FIELD**	
			0.58m: SILT with some clay; light brownish orange. Hard, moist, low plasticity.	0.6m: ISHSV UTP		
1			**1m:**...mottled white; trace gravel, fine, grey, subrounded, completely weathered.	0.9m: ISHSV UTP		1
			1.05m: Silty CLAY; light yellow. Hard, moist, high plasticity.	1.2m: ISHSV UTP		
			1.35m: SILT with some clay; orange brown. Hard, moist, high plasticity.	1.5m: ISHSV 209+/78 kPa		
			1.6m: Clayey SILT; light orange brown, mottled white. Hard, moist, low plasticity.			
2			**1.9m:** SILT with some clay; orange brown. Hard, moist, low plasticity.			2
			Hand Auger terminated at 2m (Target Depth)			
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 23/08/23 14:00 | m | Hole Dry

HSV Serial No: DR4940 Correction Factor: 1.491

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Client: **Kiwi Property Holdings No. 2 Limited**
Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH04

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417214m	Date started: 23/08/2023	Logged by: GMR
Equipment: 50mm Hand Auger	Northing: 774049m	Date completed: 23/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
		T	**0m:** Organic CLAY; dark brown. Stiff, moist, low plasticity. [TOPSOIL]		**0m: PLACED TOPSOIL**	
		FEc	**0.3m:** Clayey SILT with trace gravel; reddish orange, speckled white. Hard, moist, high plasticity. Gravel, fine, rounded, completely weathered volcanics. [FILL]	0.3m: ISHSV UTP 0.6m: ISHSV UTP	**0.3m: FILL SOURCED FROM LOCAL WEATHERED BASALTIC VOLCANIC DEPOSITS**	
1			**0.8m:** CLAY with some silt and trace fibrous organics; brownish orange. Hard, moist, high plasticity. Organics, fibrous rootlets.	0.9m: ISHSV UTP		1
				1.2m: ISHSV 176/86 kPa		
			1.4m to 1.8m:...trace fine gravel, rounded, potential limonite?			
			1.5m:...reddish pink, mottled white.	1.5m: ISHSV UTP		
2			**1.8m to 2m:**...trace fine gravel, subrounded, completely weathered to slightly weathered volcanics.	1.8m: ISHSV UTP		2
			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 189+ kPa		
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 23/08/23 14:00 | m | Hole Dry

HSV Serial No: 3178 Correction Factor: 1.351

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Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH05

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417150m	Date started: 30/08/2023	Logged by: GMR
Equipment: 50mm Hand Auger	Northing: 773986m	Date completed: 30/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
		T	**0m:** Organic SILT; dark brownish black. Stiff, moist, low plasticity. [TOPSOIL]		**0m: PLACED TOPSOIL**	
		FEc	**0.2m:** Clayey SILT with minor sand; brownish orange, speckled white. Hard, moist, low plasticity. Sand, fine. [FILL]	0.3m: ISHSV UTP	**0.2m: FILL SOURCED FROM LOCAL WEATHERED BASALTIC VOLCANIC DEPOSITS**	
			0.3m: Clayey SILT with trace sand; brownish orange. Hard, moist, high plasticity. Sand, fine.			
			0.4m:...trace fine to medium gravel, subrounded, pink, completely weathered volcanics.	0.6m: ISHSV UTP		
			0.65m: Silty CLAY with trace gravel; reddish orange. Hard, moist, high plasticity. Gravel, fine, subrounded to rounded, highly weathered volcanics.			
1				0.9m: ISHSV UTP		1
			1.1m:...orange brown, mottled pink and white.			
			1.2m: SILT with some clay and minor sand; reddish brown. Hard, moist, low plasticity. Sand, fine.	1.2m: ISHSV UTP		
			1.4m: CLAY with some silt; reddish orange. Hard, moist, high plasticity.			
			1.5m:...trace fine to medium gravel, subrounded to subangular, completely weathered volcanics.	1.5m: ISHSV UTP		
2				1.8m: ISHSV UTP		2
			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV UTP		
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/08/23 11:00 | m | Hole Dry

HSV Serial No: 3178 Correction Factor: 1.351

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Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH06

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417108m	Date started: 30/08/2023	Logged by: GMR
Equipment: 50mm Hand Auger	Northing: 774090m	Date completed: 30/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
		T	**0m:** Organic SILT; dark brownish grey. Firm, moist, low plasticity. Organics, fibrous rootlets. [TOPSOIL]		**0m: PLACED TOPSOIL**	
		FEc	**0.25m:** CLAY with some silt; reddish orange, mottled grey. Very stiff, moist, high plasticity. [FILL]	0.3m: ISHSV 189+ kPa	**0.25m: FILL SOURCED FROM LOCAL WEATHERED BASALTIC VOLCANIC DEPOSITS**	
				0.6m: ISHSV 170/78 kPa		
1			**0.85m to 0.9m:**...trace dark brown, fibrous rootlet organics.	0.9m: ISHSV 119/41 kPa		1
			1.05m to 1.8m:...trace fine gravel, grey, subrounded to subangular, completely weathered volcanics.	1.2m: ISHSV 189+ kPa		
				1.5m: ISHSV 187/59 kPa		
2		VRb	**1.8m:** Silty CLAY; brownish orange. Very stiff, moist, high plasticity. [COMPLETELY WEATHERED BASALT LAVA?]	1.8m: ISHSV 149/73 kPa	**1.8m: SOUTH AUCKLAND VOLCANIC FIELD**	2
			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 122/76 kPa		
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/08/23 14:30 | m | Hole Dry

HSV Serial No: 3178 Correction Factor: 1.351

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Project Reference: **510611**

AH07

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417176m	Date started: 30/08/2023	Logged by: GMR
Equipment: 50mm Hand Auger	Northing: 774119m	Date completed: 30/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
0		T	**0m:** SILT with minor clay and trace organics; dark brownish grey. Firm, moist, low plasticity. Organics, rootlets. [TOPSOIL]		**0m: PLACED TOPSOIL**	0
		FEc	**0.15m:** Clayey SILT; reddish pink, speckled white. Very stiff, moist, high plasticity. [FILL]		**0.15m: FILL SOURCED FROM LOCAL WEATHERED BASALTIC VOLCANIC DEPOSITS**	
			0.3m: Silty CLAY with trace sand; brownish orange. Hard, moist, high plasticity. Sand, fine.	0.3m: ISHSV UTP		
			0.6m: Silty CLAY; brownish orange, streaked pink, red, and white. Hard, moist, high plasticity.	0.6m: ISHSV 149/81 kPa		
1				0.9m: ISHSV UTP		1
			1m: Silty CLAY with trace gravel; brownish orange, speckled pink and white. Hard, moist, high plasticity. Gravel, fine to medium, grey and orange, subrounded, completely weathered volcanics.	1.2m: ISHSV UTP		
				1.5m: ISHSV UTP		
2				1.8m: ISHSV UTP		2
			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 108/65 kPa		
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.
2) Moved hand auger location 0.1m away from original site due to gravel encountered at 1m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/08/23 15:00 | m | Hole Dry

HSV Serial No: 3178 Correction Factor: 1.351

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Project Reference: **510611**

AH08

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417157m	Date started: 30/08/2023	Logged by: GMR
Equipment: 50mm Hand Auger	Northing: 774151m	Date completed: 30/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
		T	**0m:** Organic SILT with minor clay; dark brown. Firm, moist, low plasticity. Organics, rootlets, disseminated. [TOPSOIL]		**0m: PLACED TOPSOIL**	
		FEc	**0.25m:** Clayey SILT; pinkish orange. Hard, moist, low plasticity. [FILL]	0.3m: ISHSV UTP 0.6m: ISHSV UTP	**0.25m: FILL SOURCED FROM LOCAL WEATHERED BASALTIC VOLCANIC DEPOSITS**	
1			**0.75m:** Silty CLAY; yellowish brown, mottled grey. Hard, moist, high plasticity. **0.95m:**...minor fine gravel, grey, rounded, moderately weathered volcanics. **1m to 1.3m:**...streaked pink, red, and white. **1.2m:**...stiff.	0.9m: ISHSV UTP 1.2m: ISHSV 97/57 kPa		1
2			**1.4m:** Silty CLAY with trace gravel; brownish orange. Very stiff, moist, high plasticity. Gravel, fine, grey, subrounded to rounded, completely weathered volcanics.	1.5m: ISHSV 178/57 kPa 1.8m: ISHSV 141/57 kPa		2
3			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 149/73 kPa		3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/08/23 15:30 | m | Hole Dry

HSV Serial No: 3178 Correction Factor: 1.351

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Client: **Kiwi Property Holdings No. 2 Limited**
Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH09

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417157m	Date started: 31/08/2023	Logged by: GMR
Equipment: 50mm Hand Auger	Northing: 774213m	Date completed: 31/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
0		T	**0m:** SILT with some organics; dark brown. Stiff, moist, low plasticity. [TOPSOIL]		**0m: PLACED TOPSOIL**	0
		FEc	**0.15m:** Silty CLAY with trace gravel; dark brownish orange, streaked pink and white. Hard, moist, high plasticity. Gravel, fine, grey, subrounded, completely weathered volcanics. [FILL]	0.3m: ISHSV UTP 0.6m: ISHSV UTP 0.9m: ISHSV UTP 1.2m: ISHSV UTP	**0.15m: FILL SOURCED FROM LOCAL WEATHERED BASALTIC VOLCANIC DEPOSITS**	
1						1
		VAa	**1.5m:** Silty CLAY with trace gravel; brownish orange. Hard, moist, high plasticity. Gravel, fine, subrounded. [COMPLETELY WEATHERED ASH]	1.5m: ISHSV UTP	**1.5m: SOUTH AUCKLAND VOLCANIC FIELD**	
2			**1.8m:**...very stiff.	1.8m: ISHSV 189+ kPa		2
			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 189+ kPa		
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

HSV Serial No: 3178 Correction Factor: 1.351

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Client: **Kiwi Property Holdings No. 2 Limited**
Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH10

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417094m	Date started: 31/08/2023	Logged by: GMR
Equipment: 50mm Hand Auger	Northing: 774161m	Date completed: 31/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
0		T	**0m:** Organic SILT; dark brown. Stiff, moist, high plasticity. Organics, rootlets. [TOPSOIL]		**0m: PLACED TOPSOIL**	0
		VRb	**0.08m:** CLAY with some silt; brownish orange, mottled grey. Very stiff, moist, high plasticity. [COMPLETELY WEATHERED BASALT LAVA?]	0.3m: ISHSV 227+ kPa	**0.08m: SOUTH AUCKLAND VOLCANIC FIELD**	
			0.5m: Silty CLAY with trace gravel; light brownish grey. Very stiff, moist, high plasticity. Gravel, fine, grey, volcanics.	0.6m: ISHSV 179/88 kPa		
1			**0.6m:** CLAY with some silt and trace gravel; brownish orange. Very stiff, moist, high plasticity. Gravel, fine, grey, subrounded, highly weathered to completely weathered volcanics.	0.9m: ISHSV 227+ kPa		1
			1m: Clayey SILT; yellowish brown, streaked grey. Very stiff, moist, high plasticity.	1.2m: ISHSV 156/62 kPa		
		VAa	**1.3m:** CLAY with some silt; brownish orange. Hard, moist, high plasticity. [COMPLETELY WEATHERED ASH OR TUFF]	1.5m: ISHSV 227+ kPa		
2				1.8m: ISHSV 221/55 kPa		2
			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 227+ kPa		
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level

HSV Serial No: 2006 Correction Factor: 1.623

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Client: **Kiwi Property Holdings No. 2 Limited**
Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH11

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417083m	Date started: 31/08/2023	Logged by: GMR
Equipment: 50mm Hand Auger	Northing: 774213m	Date completed: 31/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
0		T	**0m:** Organic SILT with minor clay; dark brown. Stiff, moist, high plasticity. Organics, rootlets, disseminated. [TOPSOIL]		**0m: PLACED TOPSOIL**	0
		VRb	**0.15m:** Clayey SILT; brownish orange, streaked grey. Very stiff, moist, high plasticity. [COMPLETELY WEATHERED BASALT LAVA?]	0.3m: ISHSV 227+ kPa 0.6m: ISHSV UTP 0.9m: ISHSV 130/23 kPa 1.2m: ISHSV 127/42 kPa 1.5m: ISHSV 130/49 kPa	**0.15m: SOUTH AUCKLAND VOLCANIC FIELD**	
1						1
2			**1.6m:** Silty CLAY; light orange. Hard, moist, high plasticity.	1.8m: ISHSV 208/65 kPa		2
3			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 227+ kPa		3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 31/08/23 13:30 | m | Hole Dry

HSV Serial No: 2006 Correction Factor: 1.623

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Client: **Kiwi Property Holdings No. 2 Limited**
Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH12

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417071m	Date started: 31/08/2023	Logged by: CSR
Equipment: 50mm Hand Auger	Northing: 774277m	Date completed: 31/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
0		T	**0m:** SILT with some clay and trace organics; brown. Firm, moist, low plasticity. Organics, rootlets. [TOPSOIL]		**0m: PLACED TOPSOIL**	0
		VRb	**0.1m:** Clayey SILT with trace gravel and sand; brownish orange. Very stiff, moist, low plasticity. Gravel, fine, subrounded to subangular. Sand, fine, mica. [COMPLETELY WEATHERED BASALT LAVA]	0.3m: ISHSV 189+ kPa	**0.1m: SOUTH AUCKLAND VOLCANIC FIELD**	
			0.55m:...minor gravel, fine, subrounded to subangular, completely weathered volcanics.	0.6m: ISHSV 189+ kPa		
1				0.9m: ISHSV 176/62 kPa		1
				1.2m: ISHSV UTP		
			1.3m:...minor gravel and sand; reddish orange.	1.5m: ISHSV 173/68 kPa		
			1.75m:...trace fine to medium, white feldspar gravel, subrounded.	1.8m: ISHSV 149/122 kPa		
2						2
			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 189+ kPa		
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 31/08/23 14:00 | m | Hole Dry

HSV Serial No: 3178 Correction Factor: 1.351

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Client: **Kiwi Property Holdings No. 2 Limited**
Project: **Drury Centre Project**
Location: **132 Flanagan Road, Drury, 2113**
Project Reference: **510611**

AH13

Sheet **1** of **1**

BOREHOLE INFORMATION	**CO-ORDINATES: Mount Eden Circuit 2000**		
Method: Hand Auger	Easting: 417065m	Date started: 31/08/2023	Logged by: CSR
Equipment: 50mm Hand Auger	Northing: 774321m	Date completed: 31/08/2023	Input by: GMR
Contractor: Aurecon	Reduced level: N/A	Inclination: -90°	Checked by: BGW
		Azimuth: N/A	Reviewed by: PK

Depth (m)	Graphic Log	Layer Code	Soil Description	Testing	Additional Observations	Depth (m)
0		T	**0m:** SILT with some clay and trace organics; brown. Firm, moist, high plasticity. Organics, rootlets. [TOPSOIL]		**0m: PLACED TOPSOIL**	0
		VRb	**0.1m:** Clayey SILT with trace gravel and sand; orange, mottled brownish red. Very stiff, moist, low plasticity. Gravel, grey, subrounded. Sand, fine, mica. [COMPLETELY WEATHERED BASALT LAVA]	0.3m: ISHSV 184/49 kPa	**0.1m: SOUTH AUCKLAND VOLCANIC FIELD**	
			0.55m: Silty CLAY with trace gravel and sand; light brownish orange, mottled pink. Very stiff, moist, high plasticity. Gravel, grey, subrounded to subangular. Sand, fine, mica.	0.6m: ISHSV 189+ kPa		
1			**0.9m:**...mottled orange and pink.	0.9m: ISHSV 173/65 kPa		1
		VAa	**1.1m:** CLAY with some silt, trace gravel and sand; grey, mottled pink and orange. Very stiff, moist, high plasticity. Gravel, fine, subangular, completely weathered volcanics. Sand, fine, mica. [Fine to coarse ash or completely weathered tuff?]	1.2m: ISHSV 82/35 kPa		
			1.3m:...sand absent; brownish orange.			
		VRb	**1.5m:** CLAY with some silt; brownish orange. Firm, moist, high plasticity. [COMPLETELY WEATHERED BASALT LAVA]	1.5m: ISHSV 189+ kPa		
			1.53m: Clayey SILT with trace gravel; orange, mottled white, pink, and dark grey. Very stiff, moist, low plasticity. Gravel, fine to medium, subrounded, highly weathered, vesicular basalt.	1.8m: ISHSV 189+ kPa		
2						2
			Hand Auger terminated at 2m (Target Depth)	2m: ISHSV 189+ kPa		
3						3
4						4

REMARKS:
1) Hand auger location co-ordinates taken on personal GPS device and converted from WGS84 to Mt Eden Circuit 2000. Accuracy +/- 5m.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 31/08/23 15:00 | m | Hole Dry

HSV Serial No: 3178 Correction Factor: 1.351

HAND AUGER BOREHOLE LOG - HA03

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 19/04/2024
Borehole Location: Refer to Site Plan Logged by: AZ Checked by: SA Scale: 1:25 Sheet 1 of 1

Position: 417041.6mE; 774389.0mN Projection: NZTM
Datum: NZVD2016 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
	0.3-1.0 0.3	Sample 01 Peak = 175kPa Residual = 72kPa		0		OH: Silty organic CLAY: dark greyish black. High plasticity. (Topsoil)			
	0.6	Peak = >193kPa				CL: Silty CLAY with trace sand: red mottled orange. Low plasticity; sand, fine to coarse. (Fill)			
	0.9	Peak = UTP				CL: Silty CLAY: brown mottled red. Low plasticity. (Auckland Volcanics)	M		
				1		*... at 1.00m, becoming red mottled brown.*		H	
	1.2	Peak = UTP				*... at 1.30m, becoming brown mottled orange.*			
						... at 1.50m, becoming orange streaked red.			
	1.6	Peak = UTP				Borehole terminated at 1.6 m			
				2					
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2323 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA04

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 19/04/2024
Borehole Location: Refer to Site Plan Logged by: AZ Checked by: SA Scale: 1:25 Sheet 1 of 1
Position: 417117.3mE; 774415.9mN Projection: NZTM
Datum: NZVD2016 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
	0.3	Peak = >193kPa		0		CL: Silty CLAY with some organic silt: brown mottled black. Low plasticity. (Topsoil)			
						... at 0.20m, becoming red, contains minor sand.			
						CL: Silty CLAY: orange-brown mottled orange. Low plasticity. (Fill)			
	0.6	Peak = >193kPa				CL: Silty CLAY: light brown streaked orange. (Auckland Volcanics)			
	0.9	Peak = UTP							
				1		CL: Silty CLAY: orange streaked red. Low plasticity. (Auckland Volcanics)			
	1.2	Peak = UTP				... at 1.20m, becoming red mottled orange.	M	H	
						... at 1.50m, becoming light brown mottled red.			
	1.6	Peak = UTP							
	2.0	Peak = UTP		2		... at 2.00m, becoming red mottled light brown.			
	2.4	Peak = >193kPa				Borehole terminated at 2.4 m			
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2323 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA05

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 19/04/2024
Borehole Location: Refer to Site Plan Logged by: AZ Checked by: SA Scale: 1:25 Sheet 1 of 1

Position: 417194.0mE; 774441.1mN Projection: NZTM
Datum: NZVD2016 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
	0.3-1.0 0.3	Sample 01 Peak = 151kPa Residual = 83kPa				OH: Silty Organic CLAY: dark greyish black. High plasticity. (Topsoil)			
	0.6	Peak = 124kPa Residual = 58kPa				CL: Silty CLAY: orange-brown. Low plasticity. (Fill)			
	0.9	Peak = >193kPa				CL: Silty CLAY: light brown streaked red. Low plasticity. (Auckland Volcanics)	M	VSt	
	1.2	Peak = UTP		1		*... at 1.00m, becoming orange-brown.* *... at 1.20m, becoming streaked red.*		H	
	1.6	Peak = UTP				Borehole terminated at 1.6 m			
				2					
				3					
				4					
				5					

Dynamic Cone Penetrometer (Blows/100mm): 5, 10, 15

Termination Reason: Target Depth Reached
Shear Vane No: 2323 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA06

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 23/04/2024
Borehole Location: Refer to Site Plan

PRELIMINARY

CMW Geosciences

Scale: 1:25 Sheet 1 of 1

Position: Projection: NZTM
Datum: NZVD2016 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
	0.3	Peak = 168kPa Residual = 55kPa				CL: Silty CLAY: light brown mottled orange. Low plasticity. (Auckland Volcanics)			
						... at 0.30m, becoming light brown.			
	0.6	Peak = 193kPa Peak = >192kPa							
						... at 0.80m, becoming streaked red.			
	1.0	Peak = 193kPa Peak = >192kPa		1		Borehole terminated at 1.0 m			
				2					
				3					
				4					
				5					

Termination Reason: Target depth reached.
Shear Vane No: 2323 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA12

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 23/04/2024
Borehole Location: Refer to Site Plan

PRELIMINARY

CMW Geosciences

Scale: 1:25 Sheet 2 of 2

Position: Projection: NZTM
Datum: NZVD2016 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
	9.0	Peak = UTP		6 7 8 9 10					

Termination Reason: Target depth reached.
Shear Vane No: 2323 DCP No:
Remarks: Groundwater notencountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA14

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 23/04/2024
Borehole Location: Refer to Site Plan

PRELIMINARY

CMW Geosciences

Scale: 1:25 Sheet 1 of 1

Position: Projection: NZTM
Datum: NZVD2016 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit)	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
				0		OL: Silty Organic CLAY: light brown mottled dark brown. Low plasticity. (Topsoil)			
	0.4	Peak = UTP				CL: Silty CLAY: orange streaked red. Low plasticity. (Auckland Volcanics)			
	0.6	Peak = UTP							
	0.9	Peak = UTP				*... at 0.90m, becoming brown streaked orange.*			
				1		Borehole terminated at 1.0 m			
				2					
				3					
				4					
				5					

Termination Reason: Target depth reached.
Shear Vane No: 2323 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

APPENDIX F: INSPECTION RECORDS

GROUND TEST LOCATION

Project Nam Drury Town Center
Contractor: Ross Reid Contractors Ltd
Date: 2022

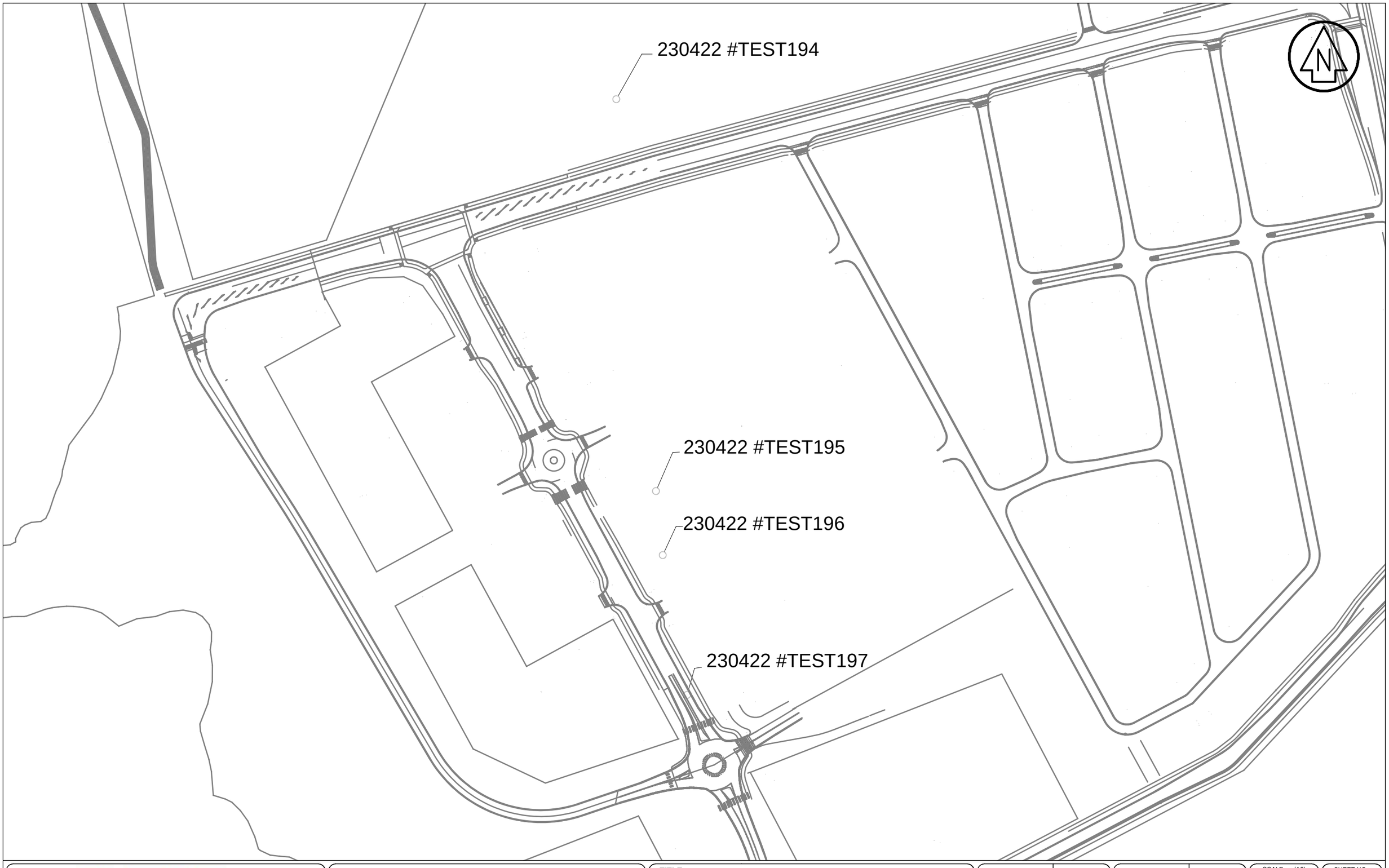
Date Tested	Road Test Ltd Control Number	Point Attribute	Coordinates		Elevation	Code	Remarks	Notes
			Easting	Northing				
221012	15	1	417148.6	774116.1	21.61			Re test-32
	16	2	417139.4	774071.3	21.15		Pass	
	17	3	417078.4	774066.6	21.138			Re-test-33
	18	4	417227.9	774298.3	27.877		Pass	
221013	19	1	417230.6	774294.3	27.847		Pass	
	20	2	417229.9	774237.9	26.894		Pass	
221017	21	1	417179.6	774196.8	25.55	Test		Re-test-35
	22	2	417170.7	774180.5	24.51	Test		Re-test-34
221020	23	1	417191.3	774269	25.99	Test	Pass	Lift 1,Historical Well Backfill
	24	2	417191.9	774268.1	26.41	Test	Pass	Lift 1,Historical Well Backfill
	25	3	417190.4	774268.8	26.99	Test	Pass	Lift 1,Historical Well Backfill
	26	4	417191.1	774268.7	27.47	Test	Pass	Lift 1,Historical Well Backfill
	27	5	417190.8	744269.2	28.03	Test	Pass	Lift 1,Historical Well Backfill
	28	6	417187.1	774268.7	28.41	Test	Pass	Lift 1,Historical Well Backfill
221021	29	1	417203.7	774246.8	27.4	Test	Pass	
	30	2	417206.7	774218.4	26.55	Test	Pass	
	31	3	417181.3	774190.1	25.23	Test	Pass	
221025								
	32	Previously 15					Pass	Pass in Re-Test
	33	Previously 17					Pass	Pass in Re-Test
	34	Previously 22					Pass	Pass in Re-Test
	35	Previously 21					Pass	Pass in Re-Test
	36	1	417147.5	774079.8	21.72	Test	Pass	
	37	2	417127.4	774080.6	21.66	Test	Pass	
	38	3	417119.8	774089.5	22.57	Test	Pass	
	39	4	417135.7	774123.5	22.98	Test	Pass	
	40	5	417165.2	774129	22.74	Test	Pass	
	41	6	417168.7	774157.1	23.18	Test	Pass	
221026	42	1	417224.5	774296.7	28.14	Test		Re-test-57
	43	2	417230.9	774270.1	27.87	Test	Pass	
	44	3	417242	774248.9	27.78	Test		Re-test-58

	45	4	417222.7	774204.7	26.81	Test	Pass	
221027	46	1	417186.7	774149.2	24.45	Test	Pass	
	47	2	417172.4	774131.8	23.78	Test	Pass	
	48	3	417159.3	771115.6	22.94	Test	Pass	
	49	4	417131	774117.8	23.12	Test	Pass	
	50	5	417118.4	774117.4	23.76	Test	Pass	
	51	6	417133.5	774138.6	24.72	Test	Pass	
221028	52	1	417222.9	774296.9	28.55	Test	Pass	
	53	2	417217.2	774213.7	27.43	Test	Pass	
	54	3	417197.9	774197.8	26.58	Test	Pass	
	55	4	417190.9	774215.3	27.14	Test	Pass	
	56	5	417180	774105.8	24.29	Test	Pass	
221102	57	Previously 42					Pass	Pass in Re-Test
	58	Previously 44					Pass	Pass in Re-Test
221104	59	1						
	60	2	417140.6	774146.9	24	Test	Pass	
	61	3	417110.4	774092.4	23	Test	Pass	
	62	4	416872	774218.6	21	Test	Pass	
	63	5	416853.1	774253.5	20	Test	Pass	
221114	64	1	417197.7	774191.8	27	Test	Pass	
	65	2	417152.7	774139.7	24	Test	Pass	
	66	3	417134.2	774094.9	23	Test	Pass	
221205	67	1	416956.9	774141.4	23.75	Test	Pass	
	68	2	416797	774267.9	18.55	Test	Pass	
	69		416911.1	774348.6	17.18	Test	Pass	
	70	1	416946.9	774368.1	19.28	Test	Pass	
	71	2	416977.2	774203.5	28.99	Test	Pass	
	72	3	417209.9	774133.9	26.24	Test	Pass	
230116	73	1		774428.7	28.48	Test	Pass	
230116	74	2		77423.66	28.5	Test	Pass	
230116	75	3		774197.5	28.77	Test	Pass	
230116	76	4		774192	28.44	Test	Pass	
230116	77	5		774230.6	28.51	Test	Pass	
230116	78	6		774260.2	25.59	Test	Pass	
230118	79	1	417177.7	774158.4	26.8	Test	Pass	
230118	80	2	417176.9	774120.6	25.67	Test	Pass	
230118	81	3	417137.1	774107.6	24.83	Test	Pass	
230118	82	4	417103.1	774084.7	24.1	Test	Pass	
230118	83	5	417211.3	774143.1	27.53	Test	Pass	
230118	84	6	417186.2	774196.3	28.05	Test	Pass	
230119	85	1				Test	Pass	
230119	86	2				Test	Pass	
230119	87	3				Test	Pass	
230119	88	4				Test	Pass	

230120	89	1	416804.4	774210.6	20.07	Test	Pass	
230120	90	2	416794.3	774250.9	19.812	Test	Pass	
230120	91	3	416843.6	774228.8	20.484	Test	Pass	
230120	92	4	416828	774281.5	18.644	Test	Pass	
230120	93	5	416904.6	774348.4	19.563	Test	Pass	
230120	94	6	416957.7	774369.7	21.09	Test	Pass	
230120	95	7	416982.3	774378	22.048	Test	Pass	
230120	96	8	RE TEST					
230123	97	1	417175.4	774116.3	26.411	Test	Pass	
230123	98	2	417202.3	774038	22.02	Test	Pass	
230123	99	3	417165.6	773999.4	20.899	Test	Pass	
230123	100	4	417131.6	773981.9	20.107	Test	Pass	
230123	101	5	417118.6	774043.6	20.933	Test	Pass	
230123	102	6	417119.3	774124.1	25.477	Test	Pass	
230125	103	1	416824.9	774222.3	20.21	Test	Pass	
230125	104	2	416818.2	774261.3	19.48	Test	Pass	
230125	105	3	416862.6	774315	19.63	Test	Pass	
230125	106	4	416905.2	774356.2	19.8	Test	Pass	
230125	107	5	416966.5	774370.8	21.98	Test	Pass	
230125	108	6	417107	774102.3	26.16	Test	Pass	
230126	109	1	417171.7	774046.8	22.8	Test	Pass	
230126	110	2	417145.6	774016.5	21.641	Test	Pass	
230126	111	3	417148.2	774062.2	22.473	Test	Pass	
230209	112	1	417178.4	774040.6	23.57	Test	Pass	
230209	113	2	417131.4	774006.3	21.37	Test	Pass	
230209	114	3	416928.1	774330.8	21.69	Test	Pass	
230209	115	4	416996.3	774374.1	23.58	Test	Pass	
230210	116	1	417009.1	774382.8	24.21	Test	Pass	
230210	117	2	417036.6	774394.3	24.74	Test	Pass	
230210	118	3	417143.9	774069.4	23.78	Test	Pass	
230210	119	4	417103.9	774043.6	21.71	Test	Pass	
230217	120	4	416948	774349.2	23.31	Test	Pass	
230220	121	1	416784.8	774348.1	18.23	Test	Pass	
230220	122	2	416815.1	774364.8	17.18	Test	Pass	
230220	123	3	416810.5	774395	16.95	Test	Pass	
230220	124	4	416849.6	774384.7	17.5	Test	Pass	
230220	125	5	416899.4	774333.9	21.9	Test	Pass	
230220	126	6	417067.5	7740202	19.13	Test	Pass	
230220	127	7	417088.8	773979	18.93	Test	Pass	
230221	129	1	416821	774232.5	20.87	Test	Pass	
230221	130	2	416797.2	774321.8	17.66	Test	Pass	
230221	131	3	416834	774354.9	17.36	Test	Pass	
230221	132	4	Re test previously Test		18.93	Test	Pass	RE TEST
230221	133	5	417075.1	773975.5	19.36	Test	Pass	

230222	134	1	416845.1	774373.2	17.74	Test	Pass	
230222	135	2	416850.1	774156.6	19.97	Test	Pass	
230222	136	3	416553.3	774132.7	20.04	Test	Pass	
230223	137	1	417083.5	773993.5		Test	Pass	
230223	138	2	417064.4	774010.8		Test	Pass	
230301	139	1	416852.6	774274.8	21.17	Test	Pass	
230301	140	2	416858.4	774226.6	21.7	Test	Pass	
230301	141	3	417094.6	773975.6	20.95	Test	Pass	
230301	142	4	417057.4	774007.6	20.54	Test	Pass	
230303	143	1	416846.1	774229.4	21.9	Test	Pass	
230303	144	2	416798	774198.5	21.86	Test	Pass	
230303	145	3	416817	774259.9	21.85	Test	Pass	
230303	146	4	417054.7	774011.8	20.84	Test	Pass	
230303	147	5	417075.2	773963.3	21.31	Test	Pass	
230303	148	6	417054.7	773977.7	21.45	Test	Pass	
230306	149	1	416855.4	774144.5	20.13	Test	Pass	
230306	150	2	416865.6	774172.9	20.97	Test	Pass	
230306	151	3	417086.5	773953.8	21.58	Test	Pass	
230306	152	4	417059.6	774014.5	21.03	Test	Pass	
230308	153	1	416795.4	774319.2	19.07	Test	Pass	
230308	154	2	417098	773978.4	22.06	Test	Pass	
230308	155	3	417083.3	774015.3	21.94	Test	Pass	
230310	156	1	416671.9	774184.7	22.11	Test	Pass	
230310	157	2	416661.3	774161.3	21.13	Test	Pass	
230310	158	3	416775.8	774393.5	18.31	Test	Pass	
230310	159	4	416784.3	774346.8	20.46	Test	Pass	
230315	160	1	416861.5	774315.8	20.21	Test	Pass	
230315	161	2	416671.9	774184.7	21.53	Test	Pass	PREVIOUSLY #156
230315	162	3	416833.3	774161.7	21.52	Test	Pass	
230321	163	1	416854.4	774313.6	20.34	Test	Pass	
230321	164	2	416842.3	774340.8	19.48	Test	Pass	
230321	165	3	416829.6	774370.6	18.63	Test	Pass	
230328	166	1	416871.3	774099.1	29.4	Test	Pass	
230328	167	2	416852.7	774052.2	19.39	Test	Pass	
230328	168	3	417033.5	774018.7	19.2	Test	Pass	
230328	169	4	417050	773997.7	19.3	Test	Pass	
230328	170	5	417059.8	773973	20.06	Test	Pass	
230328	171	6	417073.7	773952.3	21.25	Test	Pass	
230330	172	1	417079.2	773970.4	22.05	Test	Pass	
230330	173	2	417061.9	774010.7	21.9	Test	Pass	
230330	174	3	416861.8	774122.6	21.43	Test	Pass	
230330	175	4	416885.2	774047.8	20.48	Test	Pass	
230331	176	1	416856.3	774374.2	19.75	Test	Pass	

230331	177	2	416819.4	774349.3	19.87	Test	Pass	
230403	178	1	417079.3	774413.8	26.28	Test	Pass	
230403	179	2	416858.4	774226.6	27.01	Test	Pass	
230405	180	1	416830	774279.3	21.45	Test	Pass	
230405	181	2	416835.7	774298.8	21.24	Test	Pass	
230405	182	3	416875.6	774432.9	22.4	Test	Pass	
230405	183	4	416893.4	774081.3	21.76	Test	Pass	
230418	184	1	416833.9	774081.7	19.96	Test	Pass	
230418	185	2	416854.3	774028.8	19.02	Test	Pass	
230418	186	3	416860.9	773976.7	18.59	Test	Pass	
230419	187	1	416869.5	774310.2	21.78	Test	Pass	
230419	188	2	416842.9	774345.6	21.46	Test	Pass	
230420	189	1	417133.5	774419.5	28.44	Test	Pass	
230420	190	2	417082.8	774405.6	26.61	Test	Pass	
230420	191	3	416858.4	774107.8	20.71	Test	Pass	
230420	192	4	416841.3	774049.7	20.27	Test	Pass	
230420	193	5	416876.5	774024.2	19.32	Test	Pass	
230420	194	1	774339.4	416815	20.44	Test	Pass	
230420	195	2	774112.7	416838	21.31	Test	Pass	
230420	196	3	774075.6	416841.9	29.3	Test	Pass	
230420	197	4	773994.8	416856.1	19.24	Test	Pass	



ROSS REID CONTRACTORS LTD
124 Harris Road, East Tamaki, Auckland 2013

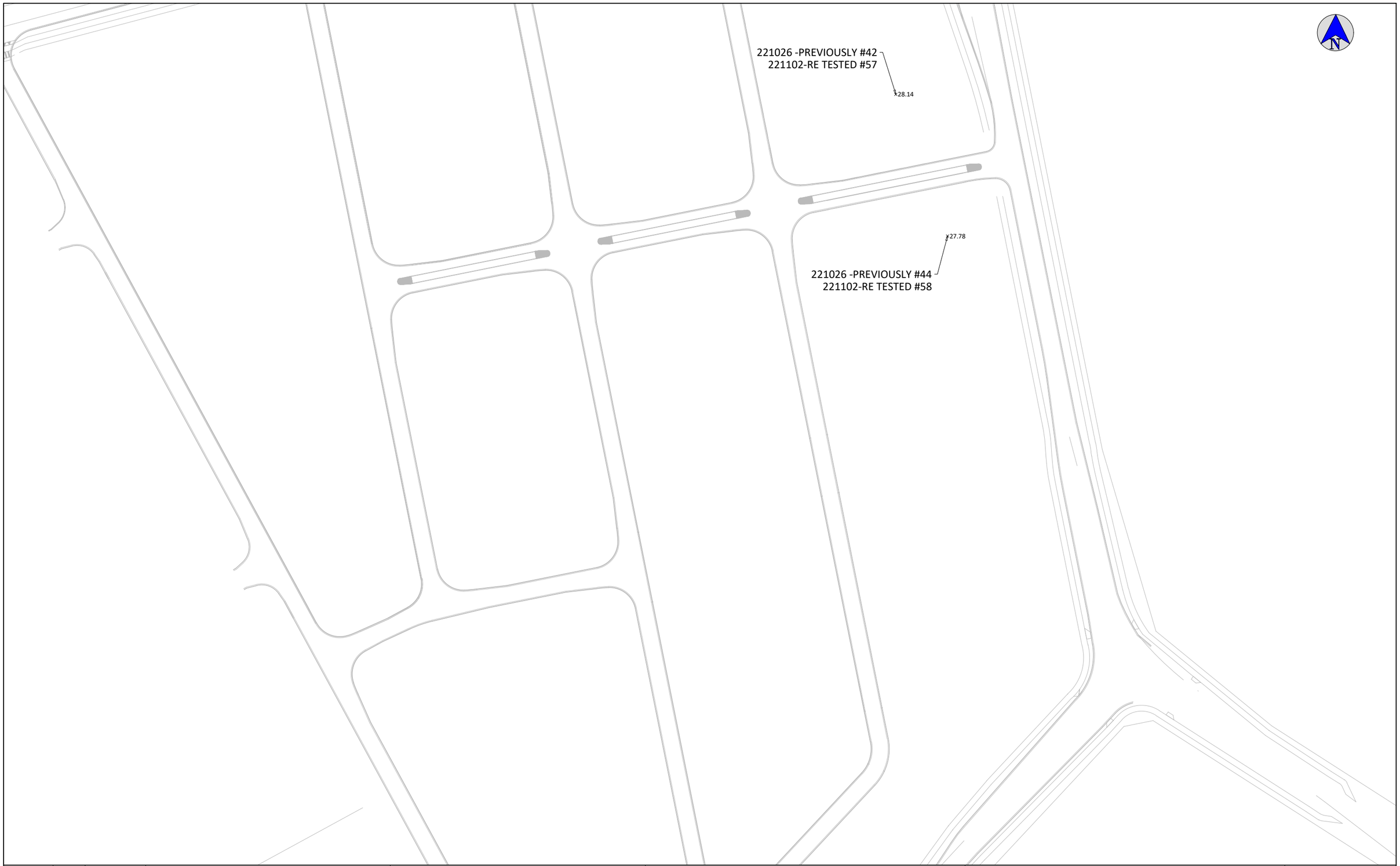
PROJECT :

133 Fitzgerald Road - Drury

TITLE :

May Test Locations

PROJECT NO.	1274	SURVEY DATE	22/05/23	SCALE : (A3) 1:2000	SHEET NO.: 1 OF 1
SURVEYOR		DRAWN BY	AR	PLOT DATE	31/05/2023
JOB IOCATION /PATH	S:\Surveyor1\civilcad 6\Data\133 Fitzgerald Road - Drury - Local site calibration\GROUND TEST\GROUND TEST\2305\Ground Test Location -MAY 2023.mjo - Drawing002				



SURVEYED		
DRAWN		
CHECKED BY		
SURVEY ORIGIN		

NOTES

REID ROSS REID CONTRACTORS LTD

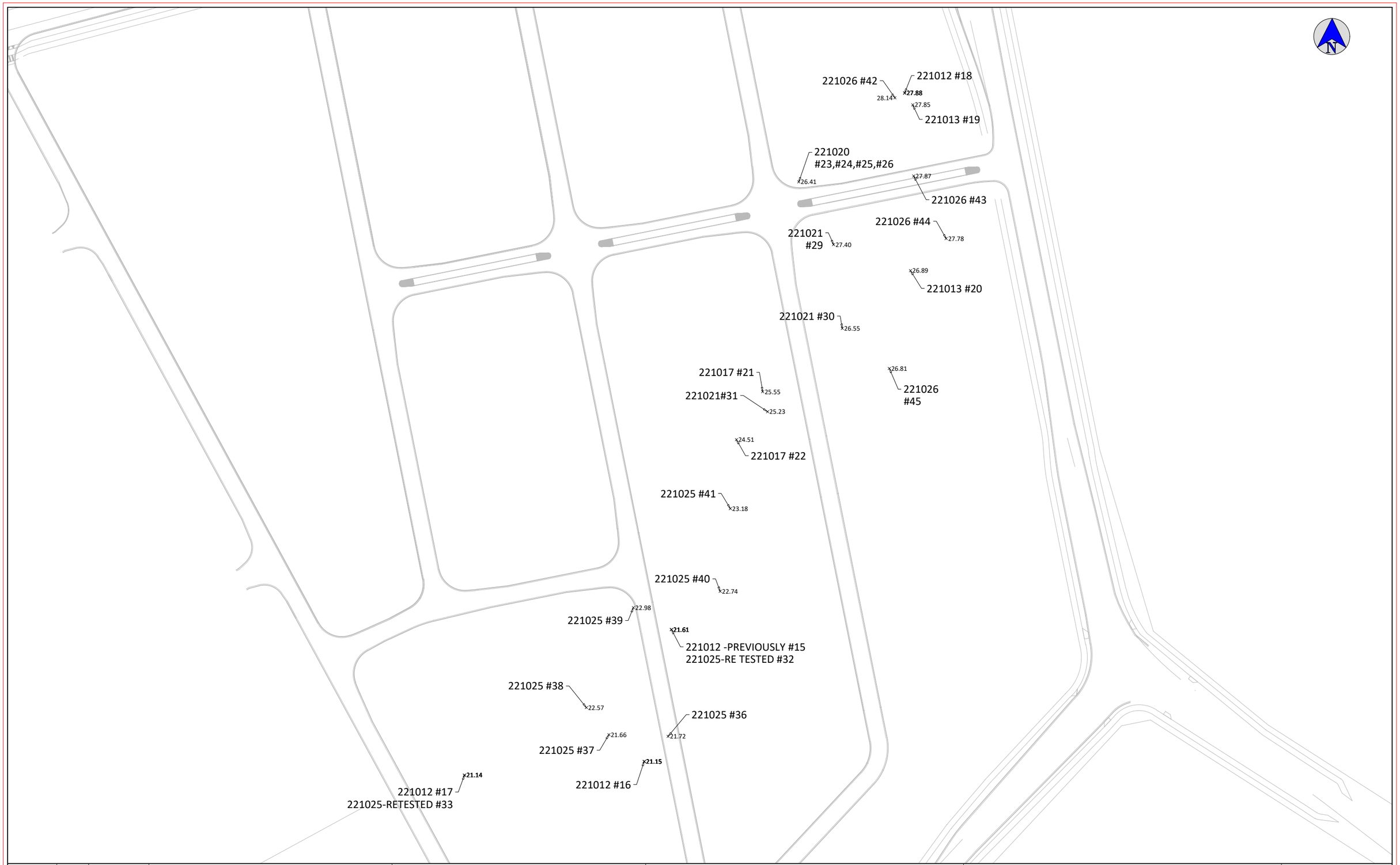
PROJECT

DRURY TOWN CENTER

TITLE

GROUND TEST
LOCATION MONTH OF
NOVEMBER

SCALE	
(A3) 1:1200	(A1) 1:600
DRAWING NO.	
SHEET 1 OF 1	REVISION 0



SURVEYED		
DRAWN		
CHECKED BY		
SURVEY ORIGIN		

NOTES

ROSS REID CONTRACTORS LTD

PROJECT

DRURY TOWN CENTER

TITLE

GROUND TEST
LOCATION MONTH OF
OCTOBER

SCALE (A3)	SCALE (A1)
1:1200	1:600

DRAWING NO.

SHEET	REVISION
1 OF 1	0

SURVEYED		
DRAWN		
CHECKED BY		
SURVEY ORIGIN		

NOTES

ROSS REID CONTRACTORS LTD

PROJECT

DRURY TOWN CENTER

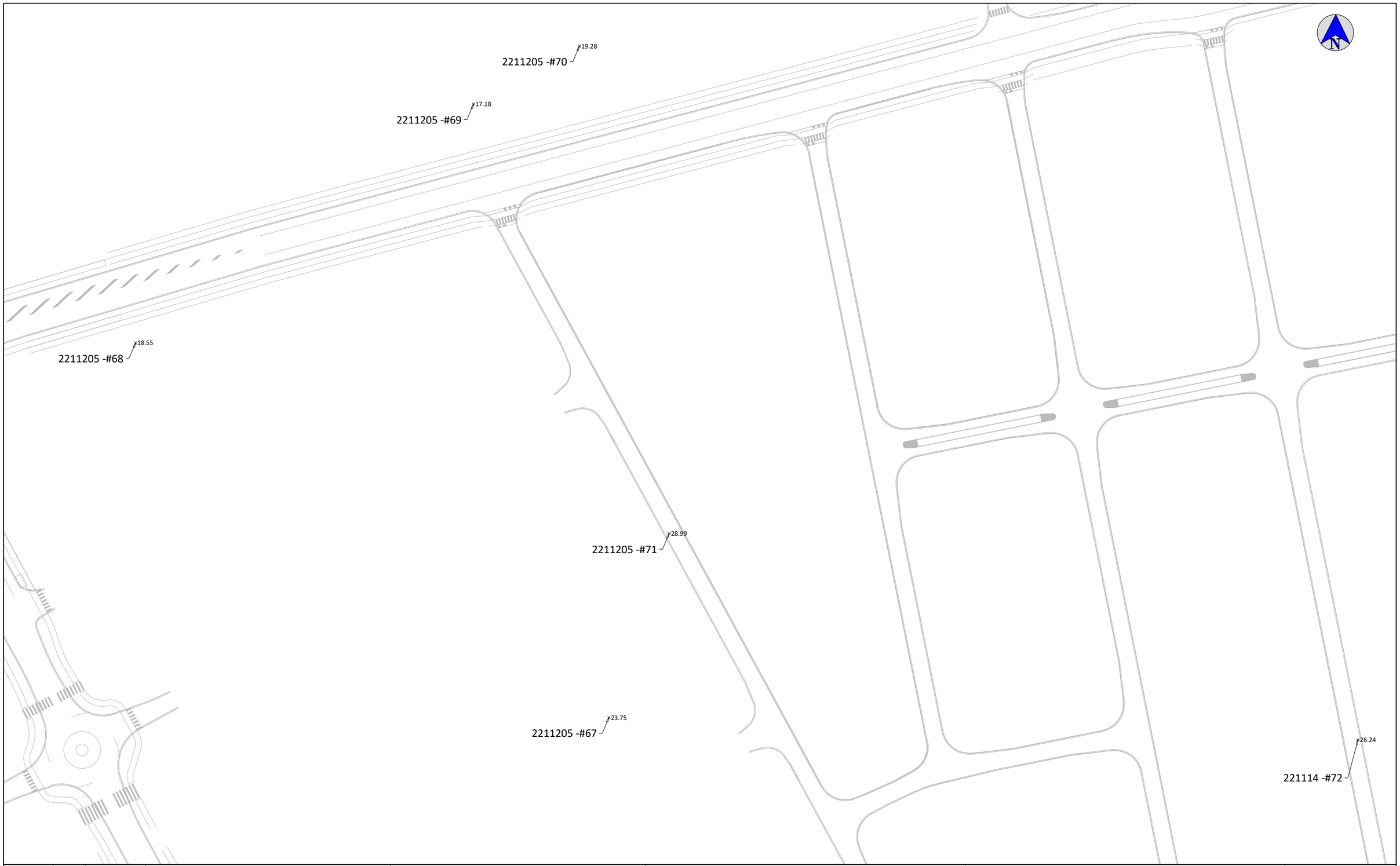
TITLE

GROUND TEST
LOCATION MONTH OF
OCTOBER-UPDATED

SCALE (A3)	SCALE (A1)
1:1200	1:600

DRAWING NO.

SHEET	REVISION
1 OF 1	0



SURVEYED		
DRAWN		
CHECKED BY		
SURVEY ORIGIN		

NOTES

REID ROSS REID CONTRACTORS LTD

PROJECT

DRURY TOWN CENTER

TITLE

GROUND TEST
LOCATION MONTH OF
DECEMBER

SCALE (A3)	SCALE (A1)
1:1200	1:600

DRAWING NO.

SHEET	REVISION
1 OF 1	0

SURVEYED		
DRAWN		
CHECKED BY		
SURVEY ORIGIN		

NOTES

REID ROSS REID CONTRACTORS LTD

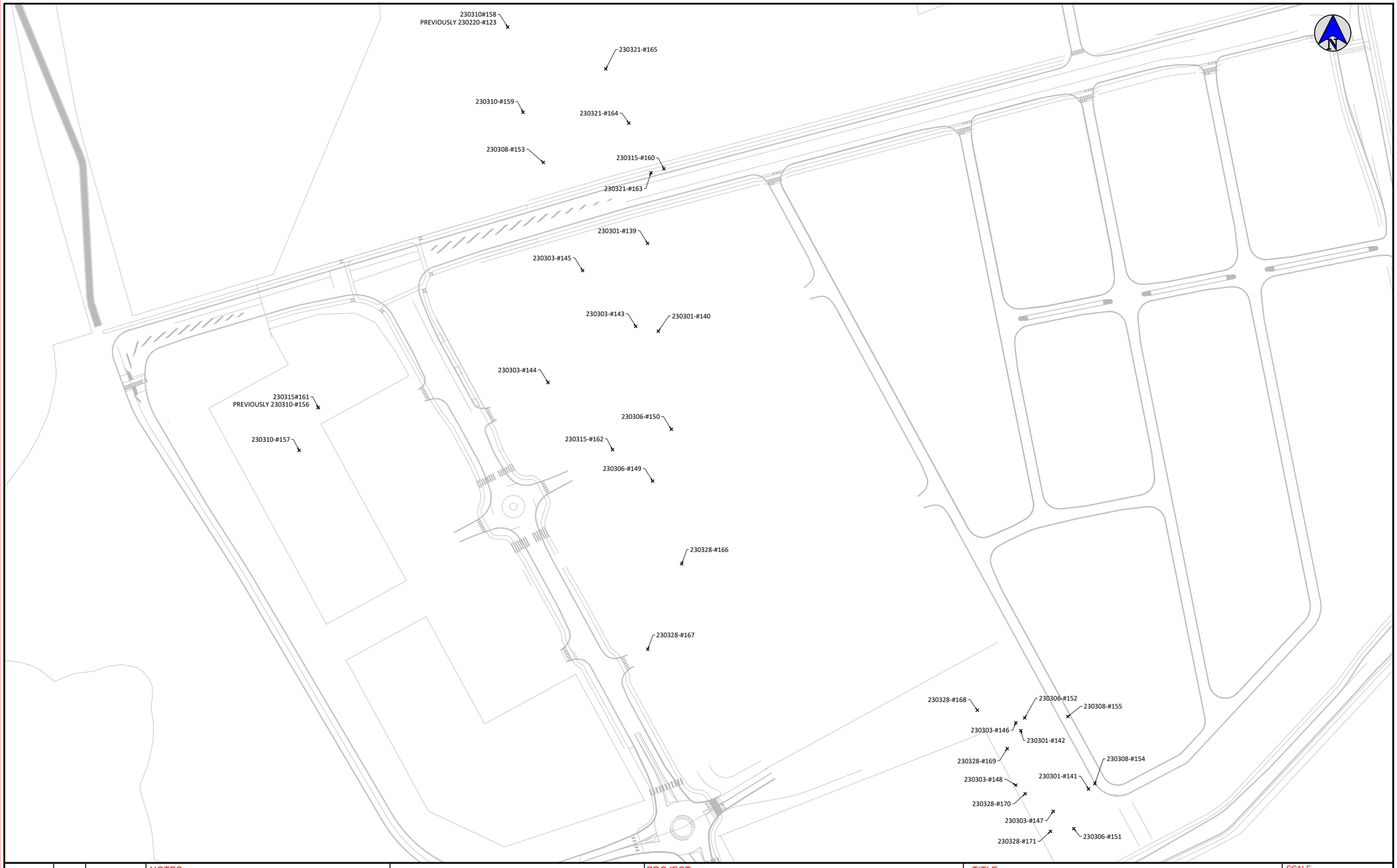
PROJECT

DRURY TOWN CENTER

TITLE

GROUND TEST
LOCATION MONTH OF
FEBRUARY 2023

SCALE	
(A3) 1:1200	(A1) 1:600
DRAWING NO.	
SHEET 1 OF 1	REVISION 0



SURVEYED		
DRAWN		
CHECKED BY		
SURVEY ORIGIN		

NOTES

ROSS REID CONTRACTORS LTD

PROJECT

DRURY TOWN CENTER

TITLE

GROUND TEST
LOCATION MONTH OF
MARCH 2023

SCALE	
(A3) 1:1200	(A1) 1:600
DRAWING NO.	
SHEET 1 OF 1	REVISION 0

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 03
Date of Order : 29.04.22

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
19	DT	13.10.22	See Plan	150	1.71	45.4	1.18	2.54	0.2	0.8	1.13	105	178	160	214+	214+	27.85	East - 417230.637
					1.71	43.4	1.19	2.54	1.4									North - 774294.261
20	DT	13.10.22	See Plan	150	1.65	52.3	1.08	2.54	0.7	2.3	1.13	97	210	157	214+	214+	26.89	East - 417229.857
					1.64	46.5	1.12	2.54	3.9									North - 774237.933

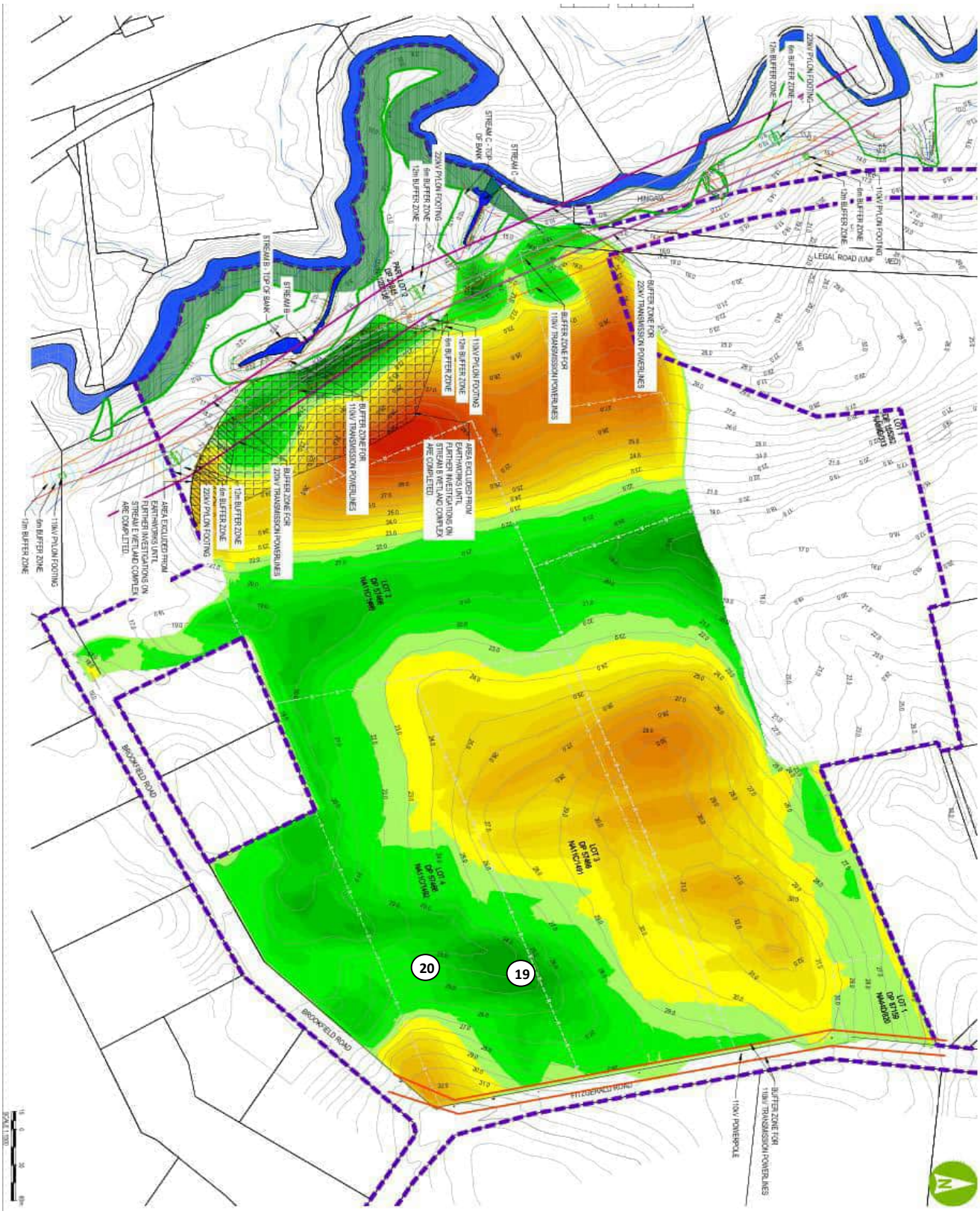
Checked By: ZH
Date: 19.10.22

NT = Not Tested

Report No : 22 0101 03
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By :	DT	Date :	13.10.22
Checked By :	ZH	Date :	19.10.22

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 04
Date of Order : 29.04.22

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
21	DT	17.10.22	See Plan	150	1.61	61.5	1.00	2.54	0.0	0.1	1.13	89	185	140	174	214+	25.55	East - 417179.645
					1.61	60.2	1.00	2.54	0.1									North - 774196.840
22	DT	17.10.22	See Plan	150	1.62	58.9	1.02	2.54	0.0	0.2	1.13	90	214+	214+	198	149	24.51	East - 417170.739
					1.62	57.9	1.02	2.54	0.4									North - 774180.544

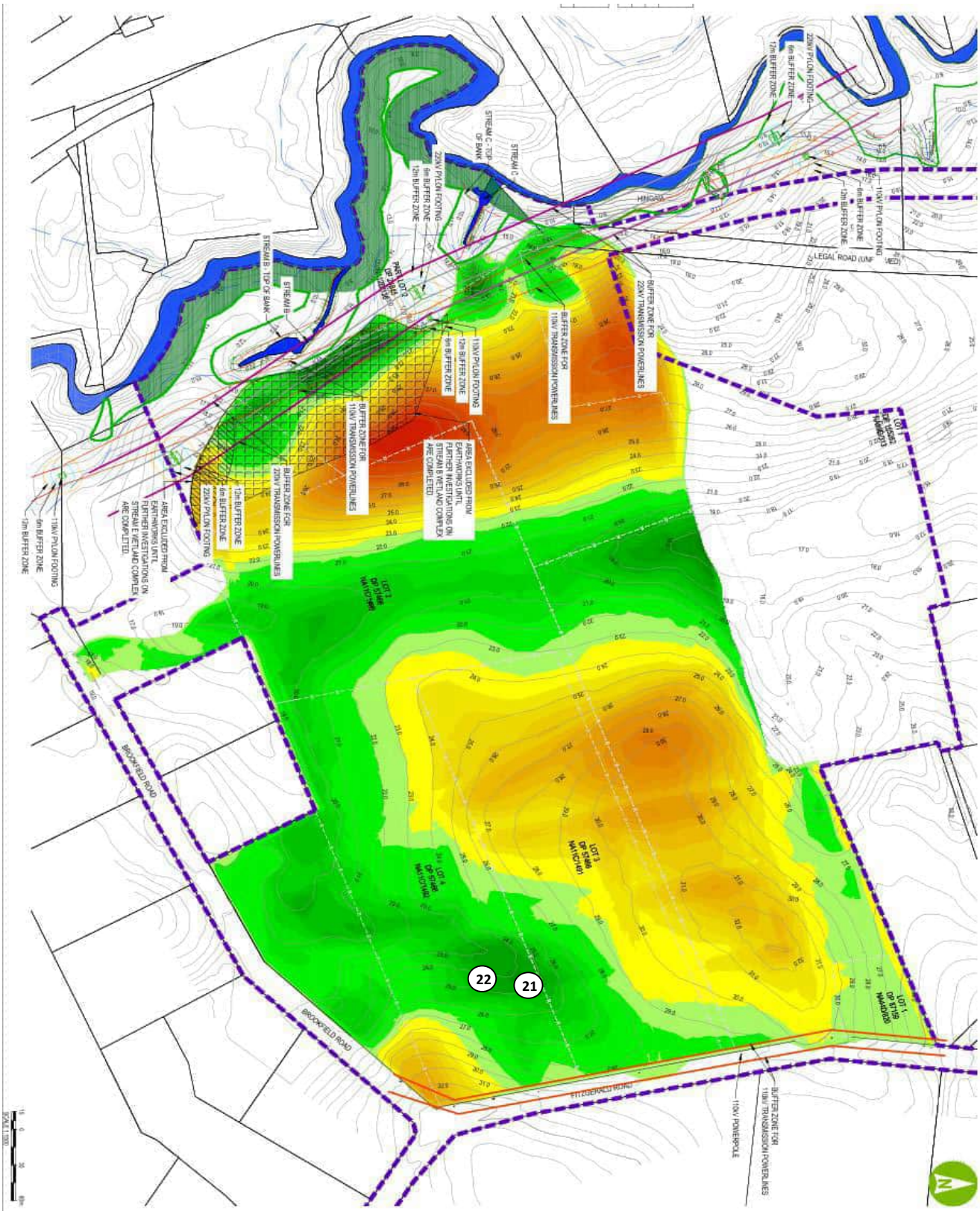
Checked By: ZH
Date: 21.10.22

NT = Not Tested

Report No : 22 0101 04
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By : DT Date : 17.10.22
Checked By : ZH Date : 21.10.22

ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 05
Date of Order : 29.04.22

ACCREDITED IANZ TESTING LABORATORY
Test results indicated as not accredited are outside the scope of the laboratory's accreditation
Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
23	DT	20.10.22	See Plan	150	1.77	44.1	1.23	2.54	0.0	0.0	1.13	108	210	210	185	185	25.99	East - 417191.308 - Lift 1
					1.77	44.8	1.22	2.54	0.0									North - 774268.955 - Historical Well Backfill
24	DT	20.10.22	See Plan	150	1.71	49.0	1.14	2.54	0.0	0.5	1.13	103	198	198	214	178	26.41	East - 417191.913 - Lift 2
					1.71	44.6	1.18	2.54	0.9									North - 774268.114 - Historical Well Backfill
25	DT	20.10.22	See Plan	150	1.72	43.4	1.20	2.54	0.5	0.2	1.13	107	214+	214+	214+	214	26.99	East - 417190.413 - Lift 3
					1.74	43.0	1.21	2.54	0.0									North - 774268.846 - Historical Well Backfill
26	DT	20.10.22	See Plan	150	1.80	38.8	1.30	2.54	0.0	0.4	1.13	113	214+	214+	214+	214+	27.47	East - 417191.093 - Lift 4
					1.76	39.3	1.26	2.54	0.7									North - 774268.713 - Historical Well Backfill
27	DT	20.10.22	See Plan	150	1.77	43.9	1.23	2.54	0.0	0.0	1.13	108	214+	214+	214+	214+	28.03	East - 417190.775 - Lift 5
					1.75	45.0	1.21	2.54	0.0									North - 774269.188 - Historical Well Backfill
28	DT	20.10.22	See Plan	150	1.74	35.9	1.28	2.54	3.4	5.3	1.13	109	214+	214+	214+	214+	28.41	East - 417187.115 - Lift 6
					1.64	39.5	1.18	2.54	7.1									North - 774268.734 - Historical Well Backfill

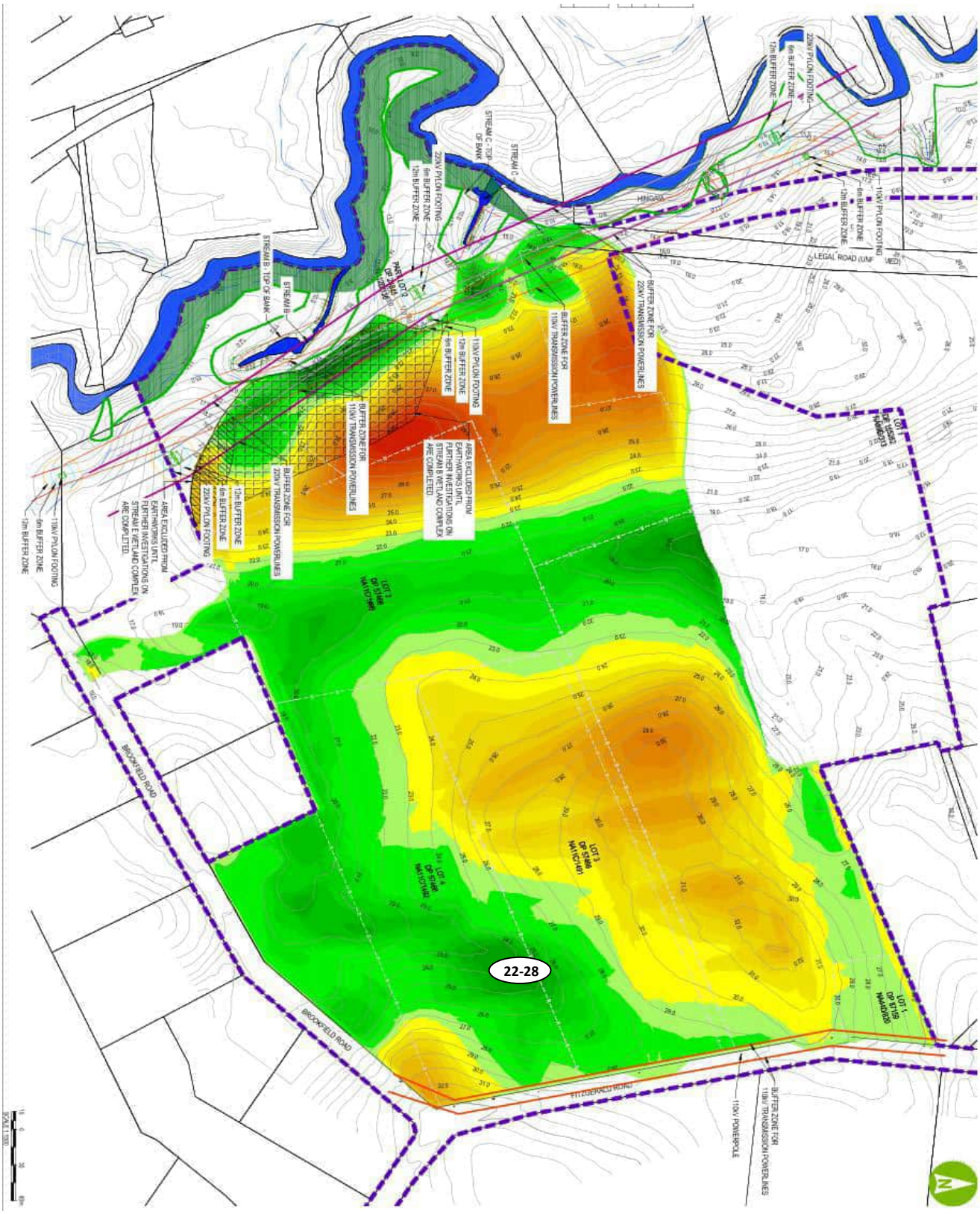
Checked By: ZH
Date: 25.10.22

NT = Not Tested

Report No : 22 0101 05
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By :	DT	Date :	20.10.22
Checked By :	ZH	Date :	25.10.22

ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 06
Date of Order : 29.04.22

ACCREDITED IANZ TESTING LABORATORY
Test results indicated as not accredited are outside the scope of the laboratory's accreditation
Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
29	DT	21.10.22	See Plan	150	1.73	50.3	1.15	2.54	0.0	0.0	1.13	101	214+	214+	214+	214+	27.40	East - 417203.730
					1.70	49.9	1.14	2.54	0.0									North - 774246.796
30	DT	21.10.22	See Plan	150	1.65	47.3	1.12	2.54	2.9	2.7	1.13	96	157	160	214+	214+	26.55	East - 77417206.693
					1.61	53.6	1.05	2.54	2.5									North - 774218.355
31	DT	21.10.22	See Plan	150	1.76	50.3	1.17	2.54	0.0	0.7	1.13	103	178	160	214+	214+	25.23	East - 417181.316
					1.69	45.1	1.17	2.54	1.4									North - 774190.060

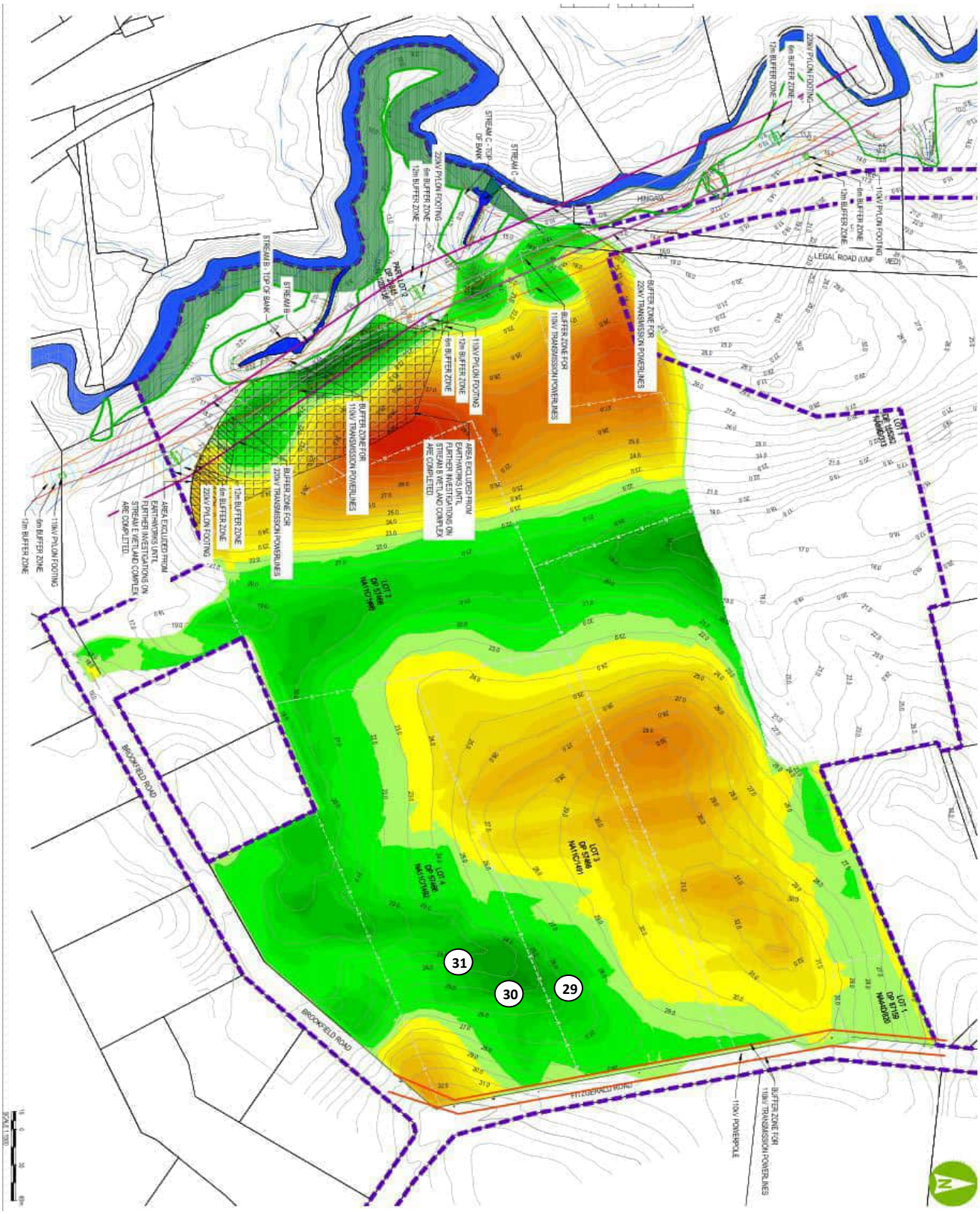
Checked By: ZH
Date: 25.10.22

NT = Not Tested

Report No : 22 0101 06
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By : DT Date : 21.10.22
Checked By : ZH Date : 25.10.22

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 07
Date of Order : 29.04.22

ACCREDITED IANZ TESTING LABORATORY
Test results indicated as not accredited are outside the scope of the laboratory's accreditation
Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
32	DT	25.10.22	See Plan	150	1.67	50.3	1.11	2.54	0.5	2.4	1.13	100	214+	214+	214+	214+	-	Retest of No.15
					1.65	44.1	1.15	2.54	4.4									
33	DT	25.10.22	See Plan	150	1.67	52.9	1.09	2.54	0.0	0.3	1.13	96	214+	214+	160	149	-	Retest of No. 17
					1.64	53.2	1.07	2.54	0.7									
34	DT	25.10.22	See Plan	150	1.75	40.5	1.24	2.54	0.7	0.4	1.13	108	214+	214+	214+	214+	-	Retest of No. 22
					1.73	44.0	1.20	2.54	0.0									
35	DT	25.10.22	See Plan	150	1.69	42.7	1.19	2.54	2.6	3.6	1.13	98	214+	214+	214+	214+	-	Retest of No. 21
					1.58	52.5	1.04	2.54	4.6									
36	DT	25.10.22	See Plan	150	1.68	53.1	1.10	2.54	0.0	0.3	1.13	96	214+	214+	214+	164	21.72	East - 417147.519
					1.64	54.2	1.06	2.54	0.6									North - 774079.776
37	DT	25.10.22	See Plan	150	1.67	50.3	1.11	2.54	0.4	0.9	1.13	96	214+	214+	153	157	21.66	East - 417127.421
					1.63	53.0	1.07	2.54	1.4									North - 774080.552
38	DT	25.10.22	See Plan	150	1.68	49.3	1.12	2.54	0.4	0.2	1.13	100	214+	214+	214+	214+	22.57	East - 417119.751
					1.71	51.1	1.13	2.54	0.0									North - 774089.524
39	DT	25.10.22	See Plan	150	1.73	52.7	1.13	2.54	0.0	0.8	1.13	103	214+	214+	214+	214+	22.98	East - 417135.743
					1.71	43.3	1.19	2.54	1.6									North - 774123.487
40	DT	25.10.22	See Plan	150	1.71	52.9	1.12	2.54	0.0	1.6	1.13	95	160	167	153	153	22.74	East - 417165.213
					1.59	54.6	1.03	2.54	3.2									North - 774129.042
41	DT	25.10.22	See Plan	150	1.62	55.1	1.04	2.54	1.3	1.4	1.13	97	181	214+	214+	214+	23.18	East - 417168.665
					1.68	46.5	1.15	2.54	1.5									North - 774157.136

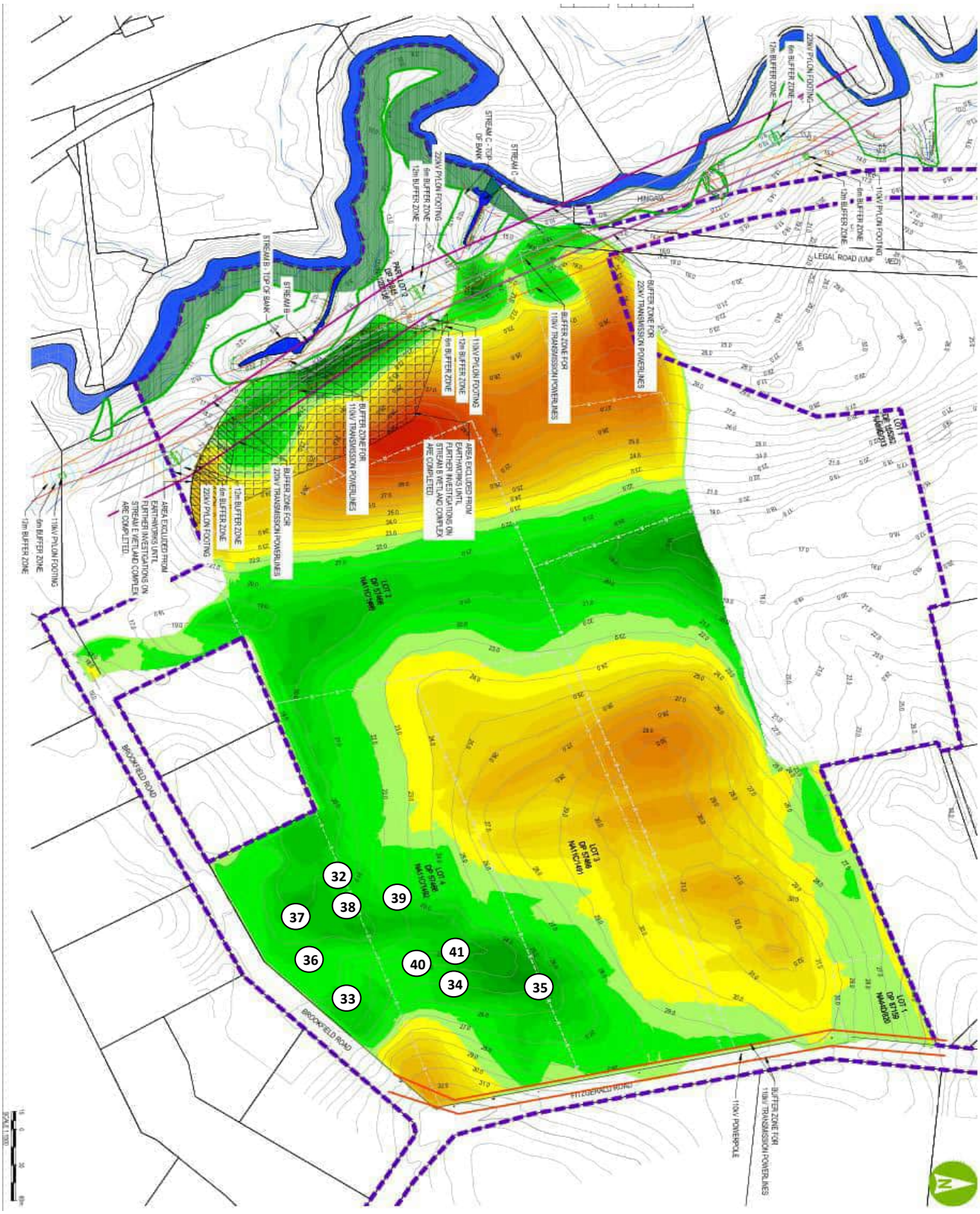
Checked By: ZH
Date: 27.10.22

NT = Not Tested

Report No : 22 0101 07
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By : DT Date : 25.10.22
Checked By : ZH Date : 27.10.22

ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 08
Date of Order : 29.04.22

ACCREDITED IANZ TESTING LABORATORY
Test results indicated as not accredited are outside the scope of the laboratory's accreditation
Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
42	DT	26.10.22	See Plan	150	1.66	52.6	1.09	2.54	0.0	0.9	1.13	95	188	214+	214+	214+	28.14	East - 417224.510
					1.62	54.2	1.05	2.54	1.7									North - 774296.652
43	DT	26.10.22	See Plan	150	1.66	49.0	1.12	2.54	1.4	1.8	1.13	95	214+	214+	214+	214+	27.87	East - 417230.936
					1.61	55.1	1.04	2.54	2.1									North - 774270.103
44	DT	26.10.22	See Plan	150	1.58	56.2	1.01	2.54	3.1	3.0	1.13	88	214+	214+	214+	195	27.78	East - 417241.988
					1.57	59.2	0.99	2.54	2.9									North - 774248.853
45	DT	26.10.22	See Plan	150	1.72	46.9	1.17	2.54	0.0	0.1	1.13	104	153	156	214+	181	26.81	East - 417222.681
					1.71	45.5	1.18	2.54	0.2									North - 774204.741

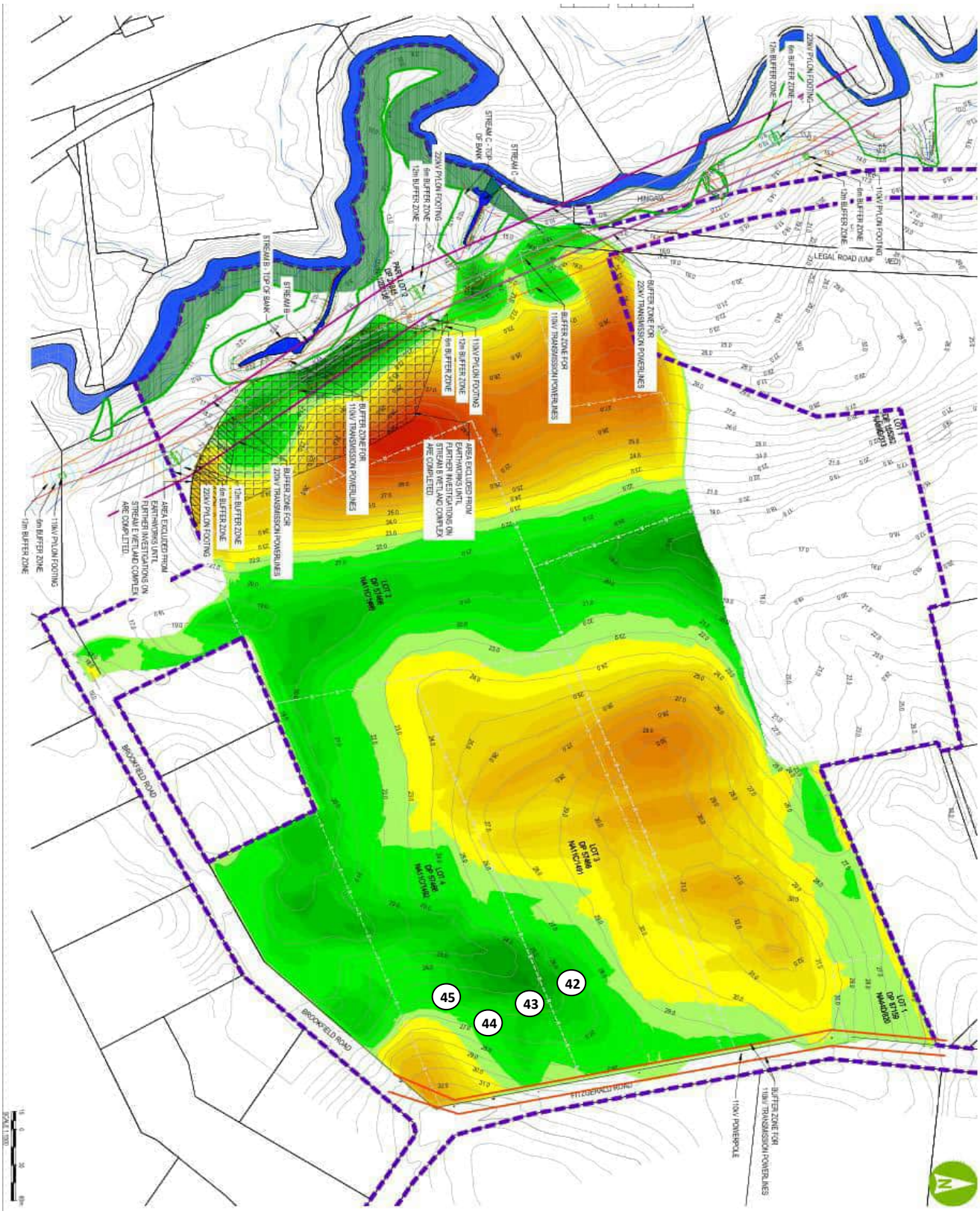
Checked By: ZH
Date: 27.10.22

NT = Not Tested

Report No : 22 0101 08
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By : DT Date : 26.10.22
Checked By : ZH Date : 27.10.22

ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 09
Date of Order : 29.04.22

ACCREDITED IANZ TESTING LABORATORY
Test results indicated as not accredited are outside the scope of the laboratory's accreditation
Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
46	DT	27.10.22	See Plan	150	1.74	41.6	1.23	2.54	0.5	1.9	1.13	107	214+	214+	214+	214+	24.45	East - 417186.669
					1.69	41.5	1.20	2.54	3.3									North - 774149.189
47	DT	27.10.22	See Plan	150	1.77	40.8	1.25	2.54	0.0	0.0	1.13	111	214+	214+	214+	214+	23.78	East - 417172.370
					1.78	42.4	1.25	2.54	0.0									North - 774131.838
48	DT	27.10.22	See Plan	150	1.70	48.4	1.14	2.54	0.0	0.8	1.13	98	140	153	171	202	22.94	East - 417159.284
					1.63	53.2	1.06	2.54	1.7									North - 774115.637
49	DT	27.10.22	See Plan	150	1.73	49.6	1.16	2.54	0.0	1.7	1.13	100	214+	214+	214+	145	23.12	East - 417131.016
					1.64	47.8	1.11	2.54	3.5									North - 774117.781
50	DT	27.10.22	See Plan	150	1.79	46.3	1.22	2.54	0.0	0.0	1.13	108	214+	214+	214+	214+	23.76	East - 417118.405
					1.77	45.1	1.22	2.54	0.0									North - 774117.386
51	DT	27.10.22	See Plan	150	1.68	42.2	1.18	2.54	3.9	1.9	1.13	97	214+	214+	214+	214+	24.72	East - 417133.532
					1.61	60.6	1.00	2.54	0.0									North - 774138.595

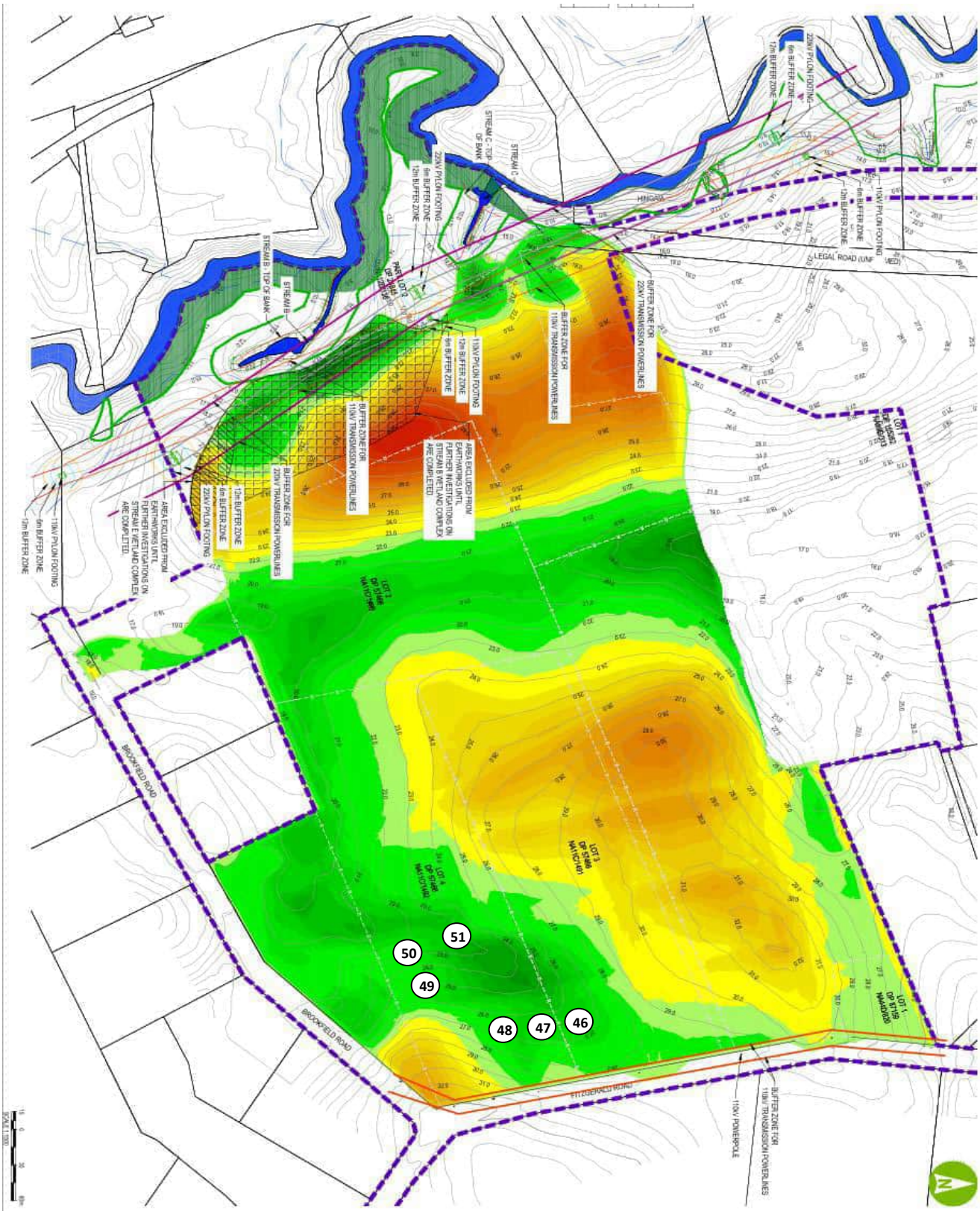
Checked By: ZH
Date: 28.10.22

NT = Not Tested

Report No : 22 0101 09
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By : DT Date : 27.10.22
Checked By : ZH Date : 28.10.22

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 10
Date of Order : 29.04.22

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
52	DT	28.10.22	See Plan	150	1.79	50.2	1.19	2.54	0.0	1.2	1.13	102	214+	214+	214+	214+	28.55	East - 417222.885
					1.66	47.8	1.12	2.54	2.3									North - 774296.850
53	DT	28.10.22	See Plan	150	1.72	46.2	1.18	2.54	0.0	0.0	1.13	105	214+	214+	214+	214+	27.43	East - 417217.226
					1.78	47.6	1.21	2.54	0.0									North - 774213.652
54	DT	28.10.22	See Plan	150	1.74	49.1	1.17	2.54	0.0	1.0	1.13	101	214+	214+	214+	214+	26.58	East - 417197.932
					1.65	48.9	1.11	2.54	2.0									North - 774197.788
55	DT	28.10.22	See Plan	150	1.72	47.2	1.17	2.54	0.0	0.0	1.13	104	214+	214+	149	178	27.14	East - 417190.870
					1.74	45.9	1.19	2.54	0.0									North - 774215.267
56	DT	28.10.22	See Plan	150	1.76	39.8	1.26	2.54	0.1	0.1	1.13	109	149	153	160	214+	24.29	East - 774105.784
					1.73	45.1	1.19	2.54	0.0									North - 417180.009

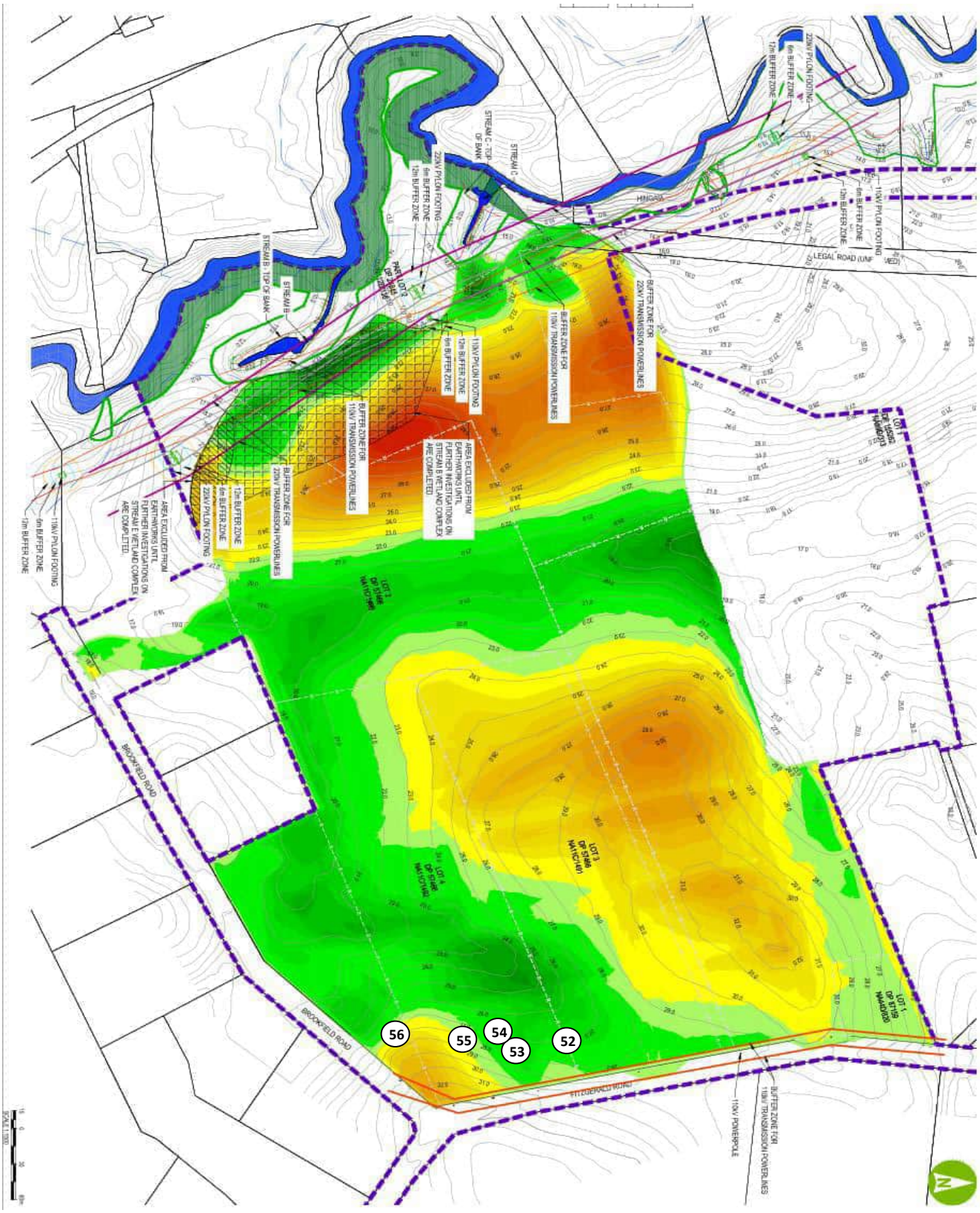
Checked By: ZH
Date: 01.11.22

NT = Not Tested

Report No : 22 0101 10
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By : DT Date : 26.10.22
Checked By : ZH Date : 01.11.22

ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 11
Date of Order : 29.04.22

ACCREDITED IANZ TESTING LABORATORY
Test results indicated as not accredited are outside the scope of the laboratory's accreditation
Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
57	DT	02.11.22	See Plan	150	1.77	49.7	1.18	2.54	0.0	0.0	1.13	104	214+	214+	214+	214+	-	Retest of No. 42
					1.74	48.6	1.17	2.54	0.0									
58	DT	02.11.22	See Plan	150	1.70	53.7	1.10	2.54	0.0	0.0	1.13	98	214+	214+	214+	214+	-	Retest of No. 44
					1.69	51.5	1.12	2.54	0.0									

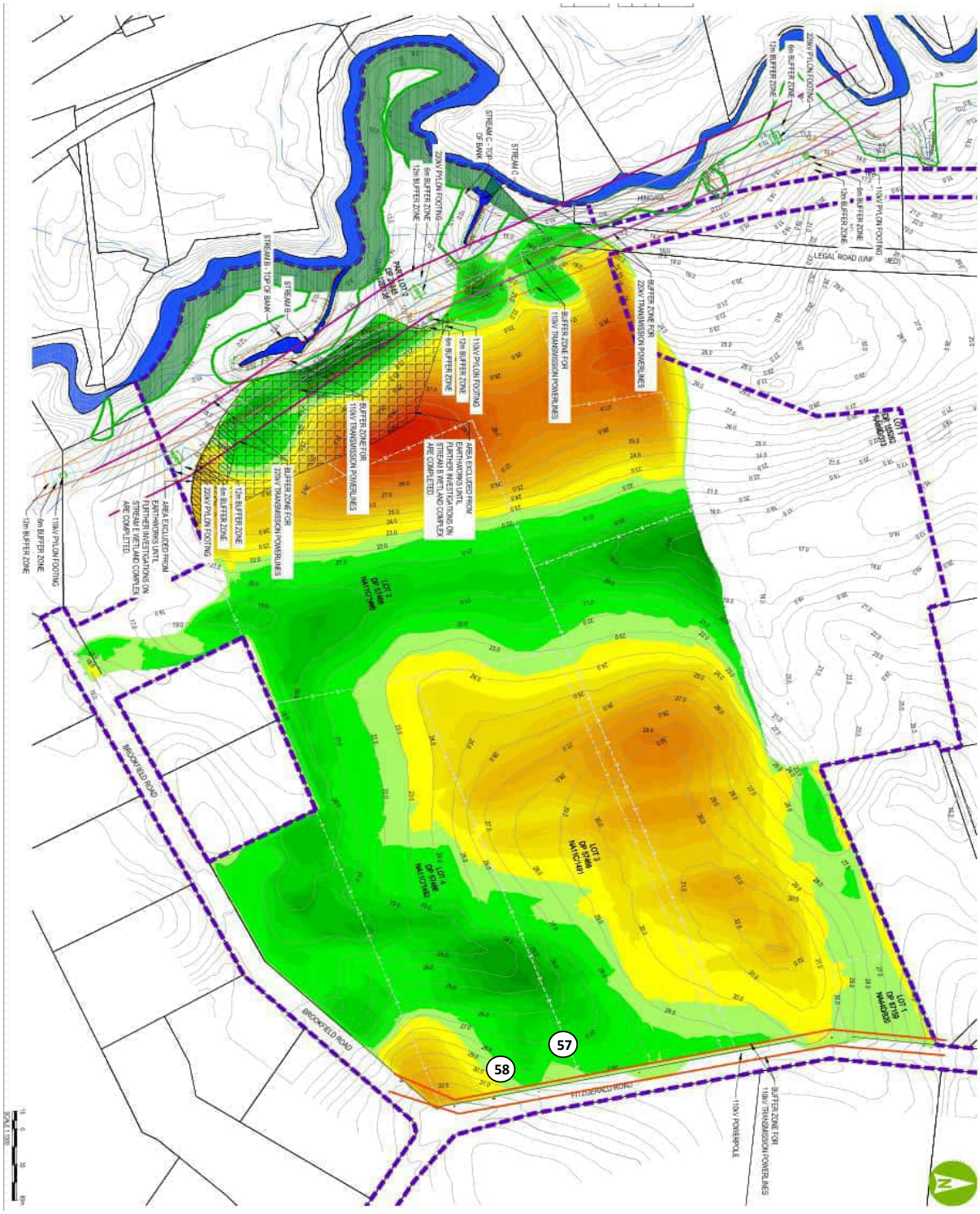
Checked By: ZH
Date: 10.11.22

NT = Not Tested

Report No : 22 0101 11
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By : DT Date : 02.11.22
Checked By : ZH Date : 10.11.22

ROADTEST LTD
152C Foundry Road, Silverdale 0932

DETERMINATION OF THE CLEGG IMPACT VALUE (CIV)

TEST METHOD ASTM D 5874

(Please note equivalent CBR conversions are not IANZ endorsed as part of this report)

Project Name :	**Drury Town Centre**		
Location :	Refer to plan	Project No :	22 0101 12
Client :	Ross Reid Contractors Ltd	Date of Order :	01.11.22
Address :	PO Box 58545 Botany	Layer Tested :	Soft Pit Run
Attention :	Deon DeRidder		

Tested By :	DT	Date :	02.11.22
Checked By :	KH	Date :	04.11.22

KEY:

DAR	Distance Across Road
CIV	Clegg Impact Value
LHS / Left	Left hand side
RHS / Right	Right hand side

ACCREDITED IANZ TESTING LABORATORY

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	CHAINAGE (m)	DAR (m)	CIV	EQUIVALENT CBR	COMMENTS
1	-		23	37	
2	-		28	55	
3	-		27	51	

ROADTEST LTD
152C Foundry Road, Silverdale 0932

DETERMINATION OF THE CLEGG IMPACT VALUE (CIV)
TEST METHOD ASTM D 5874

(Please note equivalent CBR conversions are not IANZ endorsed as part of this report)

Project Name :	**Drury Town Centre**		
Location :	Refer to plan	Project No :	22 0101 12
Client :	Ross Reid Contractors Ltd	Date of Order :	01.11.22
Address :	PO Box 58545 Botany	Layer Tested :	Soft Pit Run
Attention :	Deon DeRidder		

Tested By :	DT	Date :	02.11.22
Checked By :	KH	Date :	04.11.22

KEY:

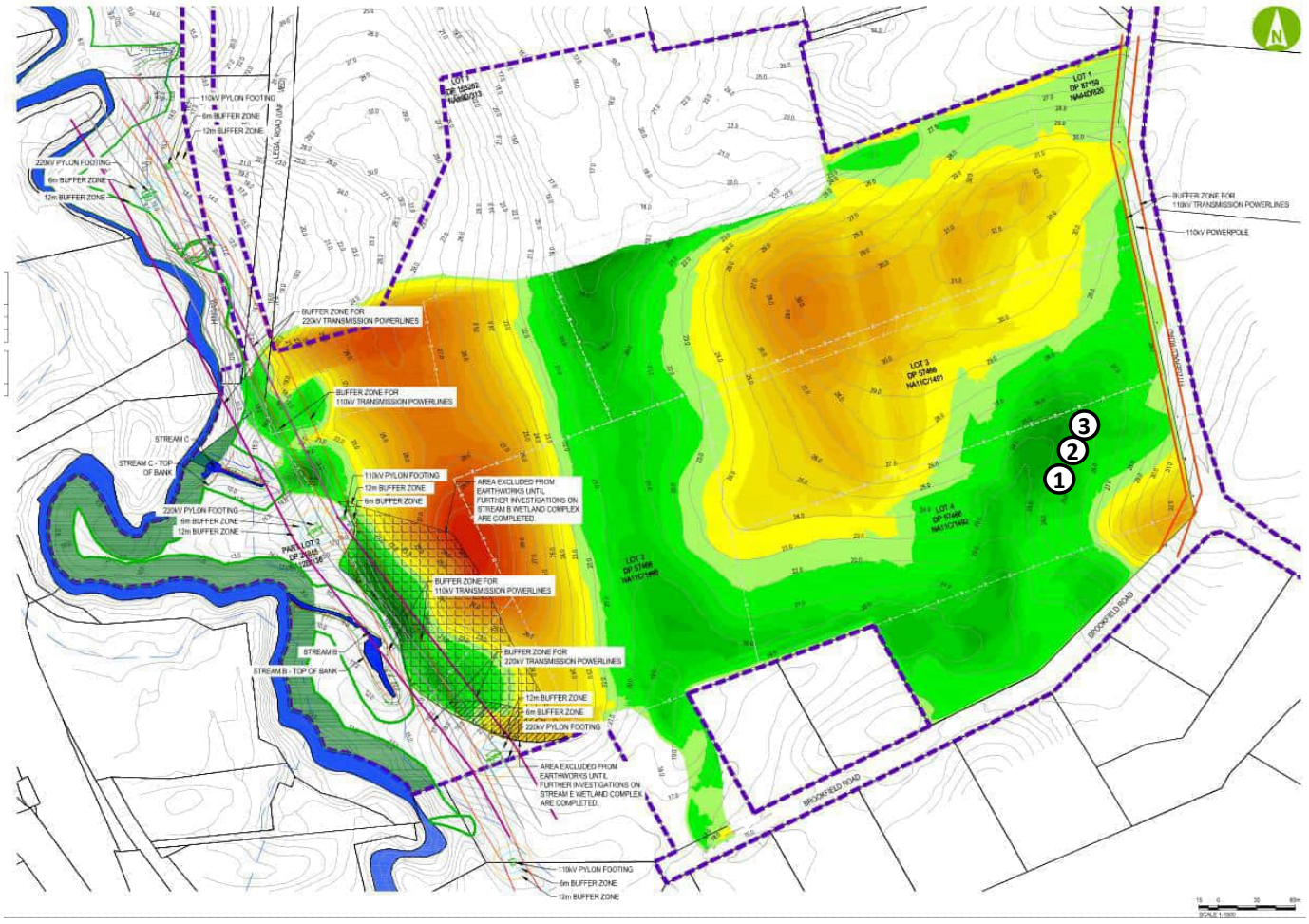
DAR	Distance Across Road
CIV	Clegg Impact Value
LHS / Left	Left hand side
RHS / Right	Right hand side

ACCREDITED IANZ TESTING LABORATORY

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	CHAINAGE (m)	DAR (m)	CIV	EQUIVALENT CBR	COMMENTS



152C Foundry Road, Silverdale 0932

DETERMINATION OF THE CLEGG IMPACT VALUE (CIV)

TEST METHOD ASTM D 5874

(Please note equivalent CBR conversions are not IANZ endorsed as part of this report)

Project Name :	**Drury Town Centre**		
Location :	Refer to plan	Project No :	22 0101 13
Client :	Ross Reid Contractors Ltd	Date of Order :	03.11.22
Address :	PO Box 58545 Botany	Layer Tested :	SPR
Attention :	Deon DeRidder		

Tested By :	DT	Date :	04.11.22
Checked By :	KH	Date :	08.11.22

KEY:

DAR	Distance Across Road
CIV	Clegg Impact Value
LHS / Left	Left hand side
RHS / Right	Right hand side

ACCREDITED IANZ TESTING LABORATORY

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	CHAINAGE (m)	DAR (m)	CIV	EQUIVALENT CBR	COMMENTS
1	-	-	22	34	
2	-	-	28	55	
3	-	-	21	31	

ROADTEST LTD

152C Foundry Road, Silverdale 0932

DETERMINATION OF THE CLEGG IMPACT VALUE (CIV)

TEST METHOD ASTM D 5874

(Please note equivalent CBR conversions are not IANZ endorsed as part of this report)

Project Name :	**Drury Town Centre**		
Location :	Refer to plan	Project No :	22 0101 13
Client :	Ross Reid Contractors Ltd	Date of Order :	03.11.22
Address :	PO Box 58545 Botany	Layer Tested :	SPR
Attention :	Deon DeRidder		

Tested By :	DT	Date :	04.11.22
Checked By :	KH	Date :	08.11.22

KEY:

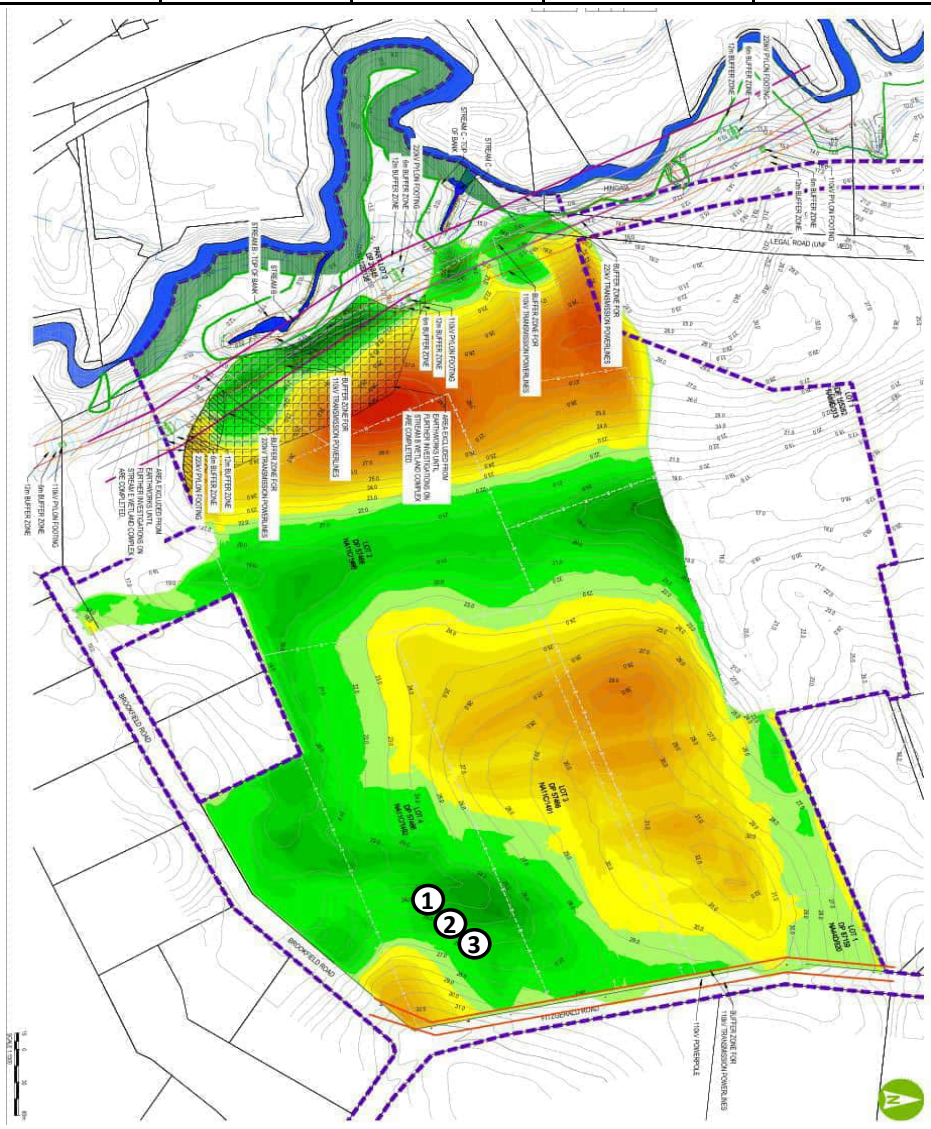
DAR	Distance Across Road
CIV	Clegg Impact Value
LHS / Left	Left hand side
RHS / Right	Right hand side

ACCREDITED IANZ TESTING LABORATORY

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	CHAINAGE (m)	DAR (m)	CIV	EQUIVALENT CBR	COMMENTS



ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 14
Date of Order : 29.04.22

ACCREDITED IANZ TESTING LABORATORY

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
59	DT	04.11.22	See Plan	150	1.71	42.0	1.20	2.54	1.9	5.0	1.13	105	214+	214+	214+	174	-	-
					1.62	39.8	1.16	2.54	8.0									
60	DT	04.11.22	See Plan	150	1.76	40.1	1.26	2.54	0.2	3.1	1.13	108	214+	214+	174	188	24	East - 417140.642
					1.65	40.3	1.18	2.54	6.1									North - 774146.942
61	DT	04.11.22	See Plan	150	1.69	47.8	1.14	2.54	0.4	5.0	1.13	100	167	171	181	214+	23	East - 417110.368
					1.58	42.0	1.11	2.54	9.6									North - 774092.394
62	DT	04.11.22	See Plan	150	1.77	37.1	1.29	2.54	1.1	0.9	1.13	114	214+	214+	214+	214+	21	East - 416872.030
					1.78	37.4	1.29	2.54	0.6									North - 774218.562
63	DT	04.11.22	See Plan	150	1.72	40.4	1.23	2.54	2.2	2.9	1.13	108	214+	214+	214+	214+	20	East - 416853.108
					1.70	39.8	1.22	2.54	3.5									North - 774253.475

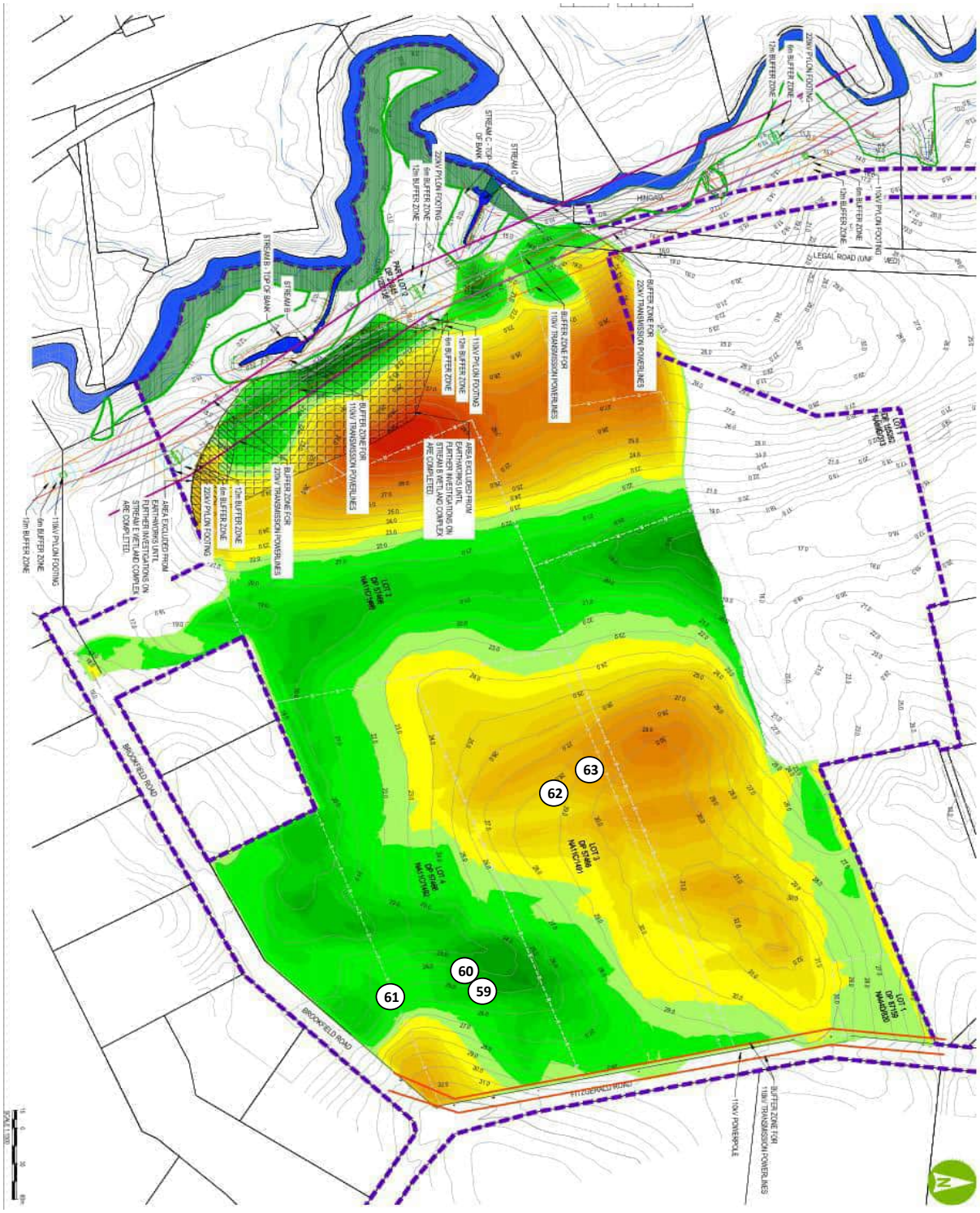
Checked By: ZH
Date: 10.11.22

NT = Not Tested

Report No : 22 0101 14
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By :	DT	Date :	04.11.22
Checked By :	ZH	Date :	10.11.22

ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 16
Date of Order : 29.04.22

ACCREDITED IANZ TESTING LABORATORY

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
67	DT	05.12.22	See Plan	150	1.72	46.4	1.18	2.54	0.0	1.2	1.13	105	214++	214++	157	160	23.75	East - 416956.878
					1.70	42.4	1.19	2.54	2.4									North - 774141.381
68	DT	05.12.22	See Plan	150	1.67	49.9	1.12	2.54	0.3	0.3	1.13	100	214++	214++	214++	214++	18.55	East - 416797.005
					1.69	48.5	1.14	2.54	0.3									North - 774267.895
69	DT	05.12.22	See Plan	150	1.83	35.1	1.35	2.54	0.0	0.0	1.13	120	214++	214++	214++	214++	17.18	East - 416911.148
					1.83	35.1	1.36	2.54	0.0									North - 774348.558
70	DT	05.12.22	See Plan	150	1.76	42.3	1.24	2.54	0.0	0.0	1.13	110	214++	214++	214++	214++	19.28	East - 416946.912
					1.77	41.8	1.25	2.54	0.0									North - 774368.139
71	DT	05.12.22	See Plan	150	1.73	44.5	1.20	2.54	0.0	0.7	1.13	106	214++	214++	214++	214++	28.99	East - 416977.203
					1.72	42.7	1.20	2.54	1.3									North - 774203.527
72	DT	05.12.22	See Plan	150	1.67	52.8	1.10	2.54	0.0	0.0	1.13	98	214++	214++	214++	214++	26.24	East - 417209.853
					1.69	51.2	1.12	2.54	0.0									North - 774133.871

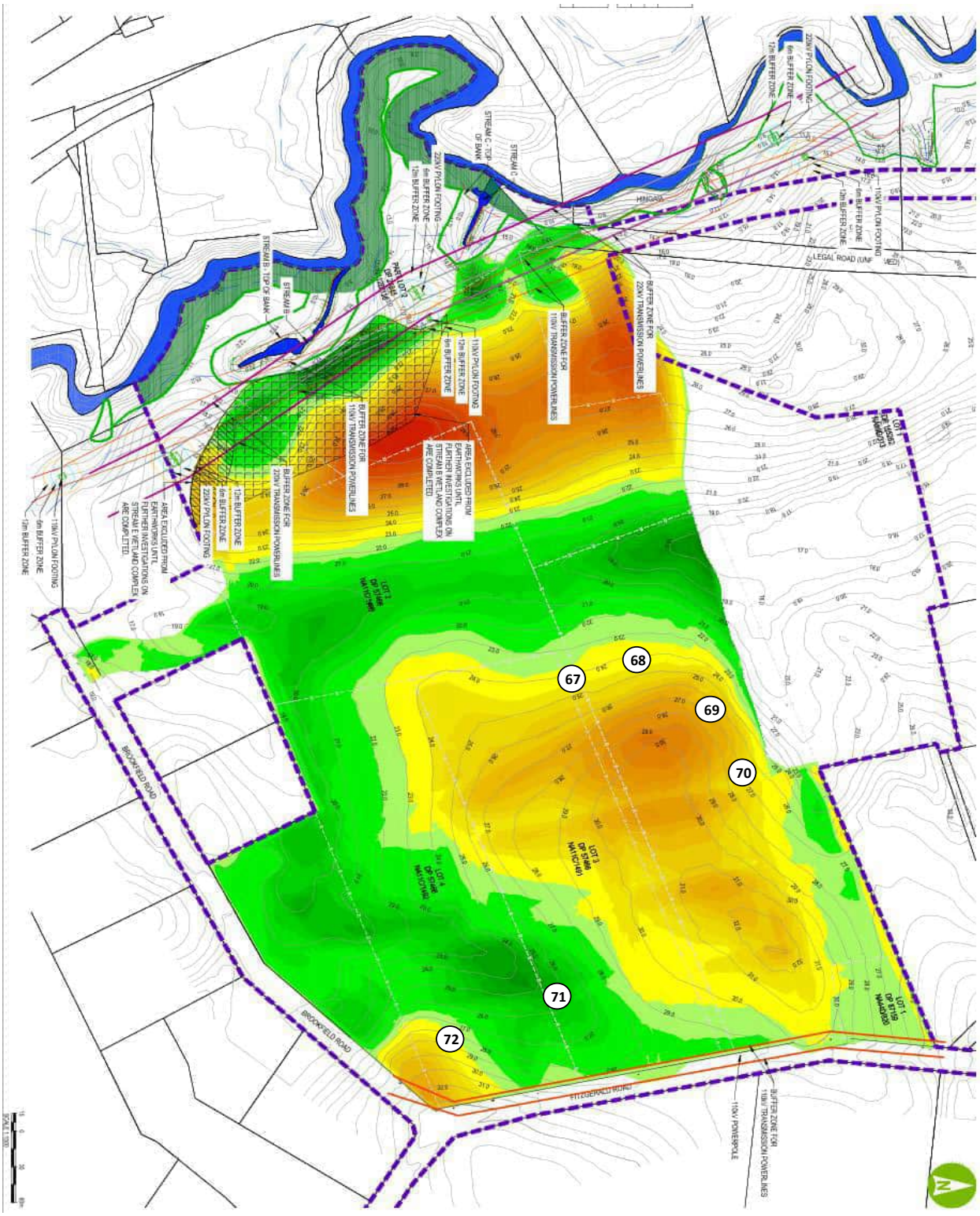
Checked By: ZH
Date: 09.12.22

NT = Not Tested

Report No : 22 0101 16
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By :	DT	Date :	05.12.22
Checked By :	ZH	Date :	09.12.22

ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 30
Date of Order : 23.02.23

ACCREDITED IANZ TESTING LABORATORY
Test results indicated as not accredited are outside the scope of the laboratory's accreditation
Signatory - Ed Cull

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
137	DT	23.02.23	See Plan	150	1.73	46.9	1.17	2.54	0.0	0.0	1.13	102	181	198	214++	214++	-	Easting - 417083.54
					1.71	49.6	1.14	2.54	0.0									Northing - 773993.47
138	DT	23.02.24	See Plan	150	1.82	46.3	1.24	2.54	0.0	0.0	1.13	108	171	191	214++	214++	-	Easting - 417064.40
					1.75	46.1	1.20	2.54	0.0									Northing - 774010.84

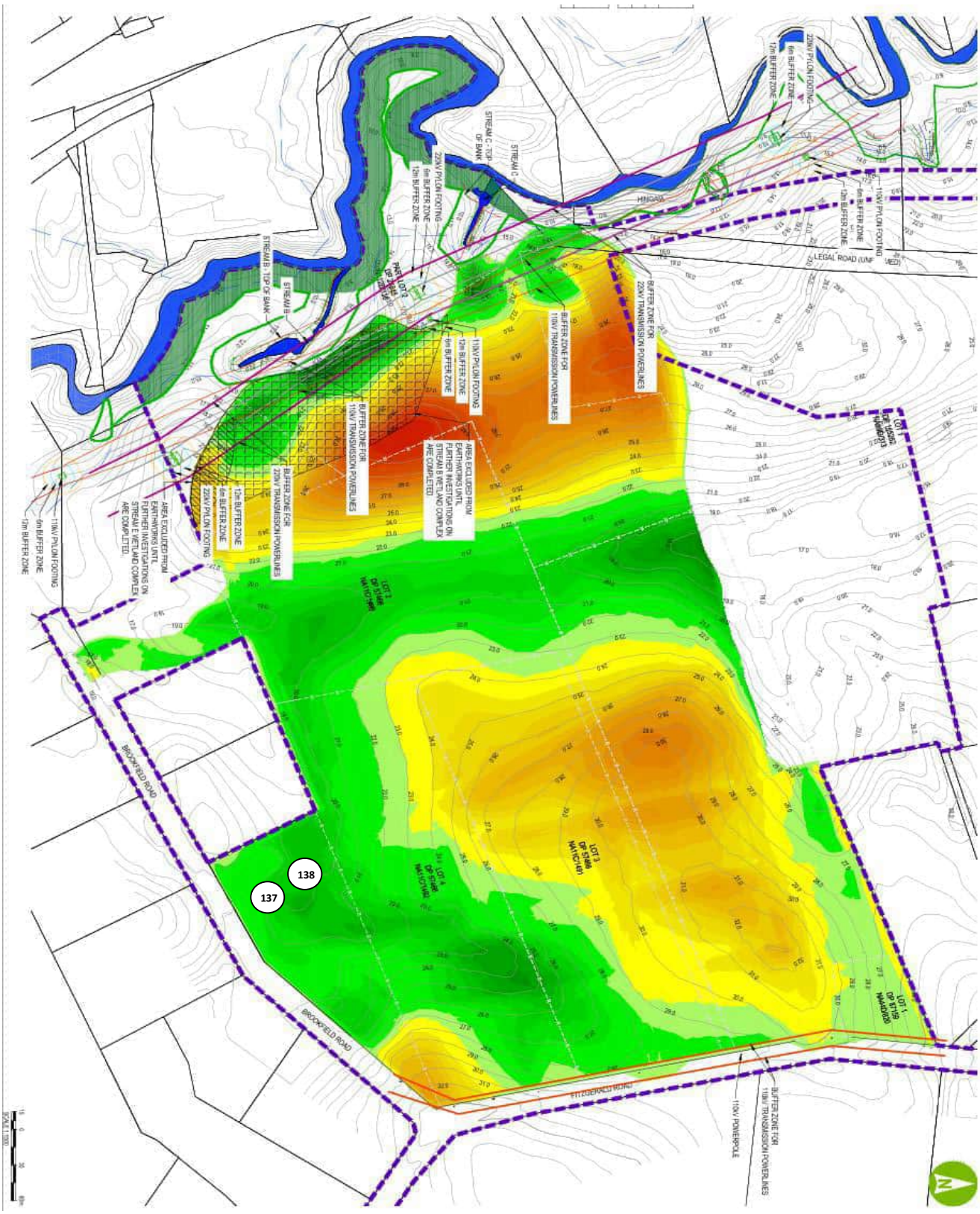
Checked By: HC
Date: 27.02.23
Page: 1 of 1

NT = Not Tested

Report No : 22 0101 30
Page : 2 of 2

Job Name : **Drury Town Centre**
Location : **-**

Site Plan - Not to scale



Tested By : DT Date : 23.02.23
Checked By : KH Date : 27.02.23

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Ed Cull

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 31
Date of Order : 29.04.22

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
139	DT	01.03.23	See Plan	150	1.81	42.9	1.27	2.54	0.0	0.0	1.13	113	214++	214++	214++	214++	21.17	Easting - 416852.61
					1.82	41.4	1.29	2.54	0.0									Northing - 774274.83
140	DT	01.03.23	See Plan	150	1.73	39.5	1.24	2.54	2.2	1.3	1.13	110	214++	214++	214++	214++	21.70	Easting - 416858.44
					1.75	40.3	1.25	2.54	0.5									Northing - 774226.63
141	DT	01.03.23	See Plan	150	1.75	41.4	1.23	2.54	0.2	1.0	1.13	109	214++	214++	214++	214++	20.95	Easting - 417094.59
					1.73	40.6	1.23	2.54	1.8									Northing - 773975.57
142	DT	01.03.23	See Plan	150	1.69	56.9	1.07	2.54	0.0	0.0	1.13	96	128	167	171	178	20.54	Easting - 4170574.2
					1.71	55.8	1.09	2.54	0.0									Northing - 774007.56

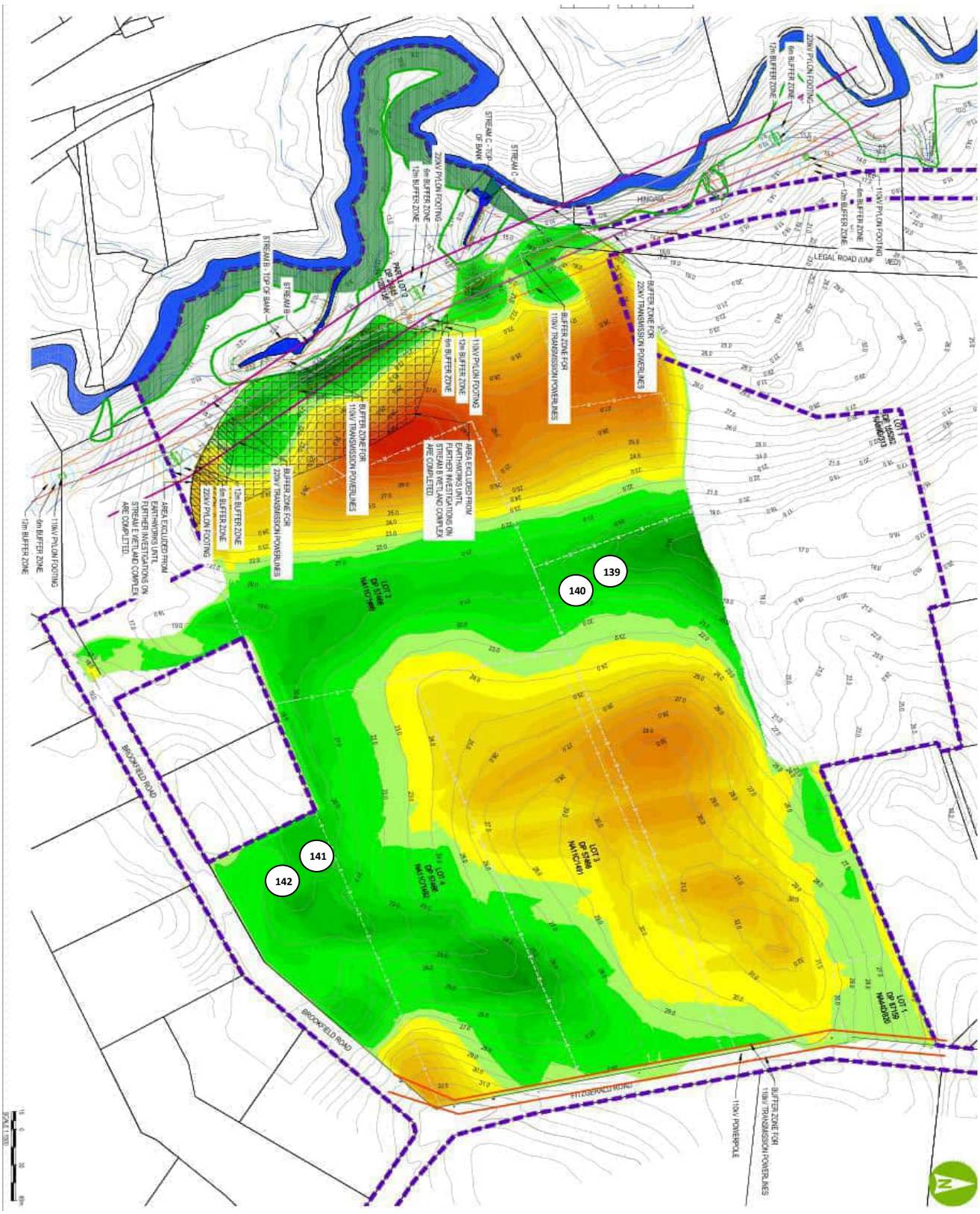
Checked By: DT
Date: 03.03.23

NT = Not Tested

Report No : 22 0101 31
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By :	DT	Date :	01.03.23
Checked By :	KH	Date :	03.03.23

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Ed Cull

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 32
Date of Order : 02.03.23

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
143	DT	03.03.23	See Plan	150	1.69	49.4	1.13	2.54	0.0	0.0	1.13	100	153	157	160	160	21.90	Easting - 416846.07
					1.71	51.1	1.13	2.54	0.0									Northing - 774229.36
144	DT	03.03.23	See Plan	150	1.76	51.3	1.16	2.54	0.0	0.0	1.13	103	164	171	188	145	21.86	Easting - 416797.98
					1.75	49.6	1.17	2.54	0.0									Northing - 774198.52
145	DT	03.03.23	See Plan	150	1.76	49.1	1.18	2.54	0.0	0.4	1.13	102	118	140	188	191	21.85	Easting - 416816.96
					1.67	49.0	1.12	2.54	0.8									Northing - 774259.94
146	DT	03.03.23	See Plan	150	1.74	43.6	1.21	2.54	0.0	0.4	1.13	106	214++	214++	214++	214++	20.84	Easting - 417054.67
					1.71	44.0	1.19	2.54	0.9									Northing - 774011.83
147	DT	03.03.23	See Plan	150	1.74	47.9	1.18	2.54	0.0	0.0	1.13	105	214++	214++	214++	214++	21.31	Easting - 417075.23
					1.75	45.8	1.20	2.54	0.0									Northing - 773963.31
148	DT	03.03.23	See Plan	150	1.69	51.0	1.12	2.54	0.0	0.0	1.13	100	214++	214++	214++	214++	21.45	Easting - 417054.67
					1.72	50.1	1.15	2.54	0.0									Northing - 773977.65

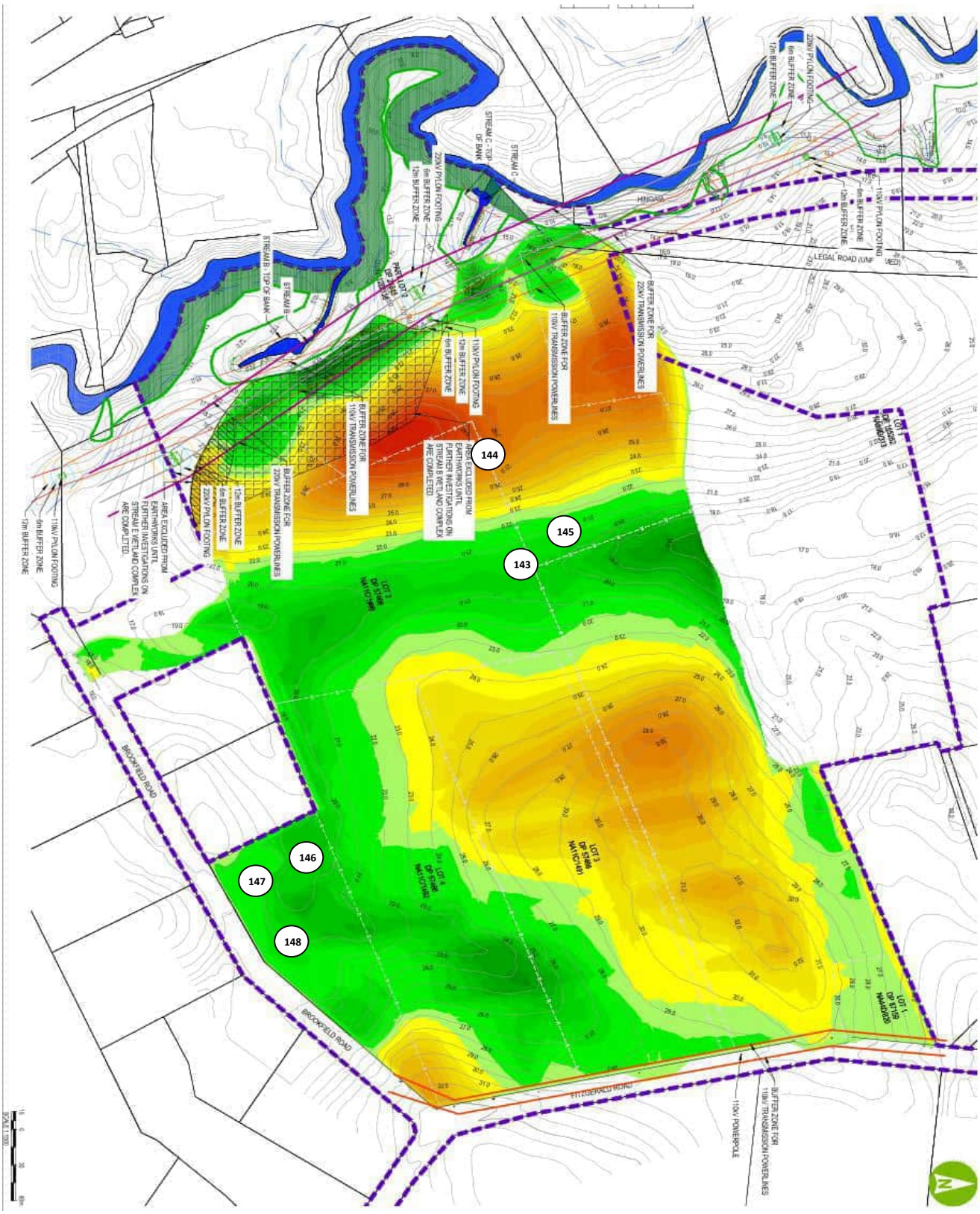
Checked By: HC
Date: 06.03.23

NT = Not Tested

Report No : 22 0101 32
Page : 2 of 2

Job Name : **Drury Town Centre**
Location : **-**

Site Plan - Not to scale



Tested By :	DT	Date :	03.03.23
Checked By :	KH	Date :	06.03.23

ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

ACCREDITED IANZ TESTING LABORATORY

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Ed Cull

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 33
Date of Order : 05.03.23

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
149	KC	06.03.23	See Plan	150	1.72	37.4	1.25	2.54	4.2	3.5	1.13	110	197++	197++	197++	197++	20.13	Easting - 416855.38
					1.72	39.0	1.24	2.54	2.9									Northing - 774144.45
150	KC	06.03.23	See Plan	150	1.70	34.0	1.27	2.54	6.8	7.3	1.13	112	197++	197++	197++	197++	20.97	Easting - 774172.87
					1.69	33.3	1.27	2.54	7.7									Northing - 416865.62
151	KC	06.03.23	See Plan	150	1.72	42.1	1.21	2.54	1.3	0.6	1.13	109	197++	197++	197++	197++	21.58	Easting - 417086.48
					1.77	42.3	1.24	2.54	0.0									Northing- 773953.82
152	KC	06.03.23	See Plan	150	1.76	47.3	1.19	2.54	0.0	0.0	1.13	106	197++	197++	197++	197++	21.03	Easting - 417059.55
					1.76	44.6	1.21	2.54	0.0									Northing - 774014.53

Checked By: HC
Date: 09.03.23
Page: 1 of 1

NT = Not Tested

ROADTEST LTD

RS009

Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Ed Cull

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 34
Date of Order : 07.03.23

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
153	KC	08.03.23	See Plan	150	1.75	45.8	1.20	2.54	0.0	0.0	1.13	108	177++	177++	177++	177++	19.07	Easting - 416795.38
					1.80	45.1	1.24	2.54	0.0									Northing - 774319.23
154	KC	08.03.23	See Plan	150	1.76	45.5	1.21	2.54	0.0	0.0	1.13	108	177++	177++	177++	177++	22.06	Easting - 417098.04
					1.79	44.9	1.24	2.54	0.0									Northing - 773978.42
155	KC	08.03.23	See Plan	150	1.79	39.4	1.28	2.54	0.0	0.0	1.13	111	177++	177++	177++	177++	21.94	Easting - 417083.25
					1.79	45.8	1.23	2.54	0.0									Northing - 774015.29

Checked By: HC
Date: 08.03.23
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NT = Not Tested

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Ed Cull

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 38
Date of Order : 27.03.23

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
166	DT	28.03.23	See Plan	150	1.78	36.2	1.31	2.54	1.1	1.6	1.13	115	191	214++	214++	214++	29.40	Easting - 416871.316
					1.76	36.2	1.30	2.54	2.1									Northing - 774099.067
167	DT	28.03.23	See Plan	150	1.72	42.7	1.20	2.54	1.3	1.7	1.13	106	157	171	178	214++	19.39	Easting - 416852.673
					1.70	43.4	1.18	2.54	2.1									Northing - 774052.183
168	DT	28.03.23	See Plan	150	1.64	38.5	1.18	2.54	8.1	6.5	1.13	106	171	178	191	195	19.20	Easting - 417033.538
					1.69	39.0	1.21	2.54	4.9									Northing - 774018.749
169	DT	28.03.23	See Plan	150	1.78	40.3	1.27	2.54	0.0	0.0	1.13	110	185	191	210	214++	19.30	Easting - 417049.956
					1.75	43.5	1.22	2.54	0.0									Northing - 773997.717
170	DT	28.03.23	See Plan	150	1.78	43.0	1.24	2.54	0.0	1.6	1.13	109	178	178	185	214++	20.06	Easting - 417059.827
					1.70	40.7	1.21	2.54	3.2									Northing - 773972.963
171	DT	28.03.23	See Plan	150	1.75	43.9	1.22	2.54	0.0	0.0	1.13	109	214++	214++	214++	214++	21.25	Easting - 417073.724
					1.78	43.8	1.24	2.54	0.0									Northing - 773952.303

Checked By: HC
Date: 29.03.23

NT = Not Tested

Report No : 22 0101 38
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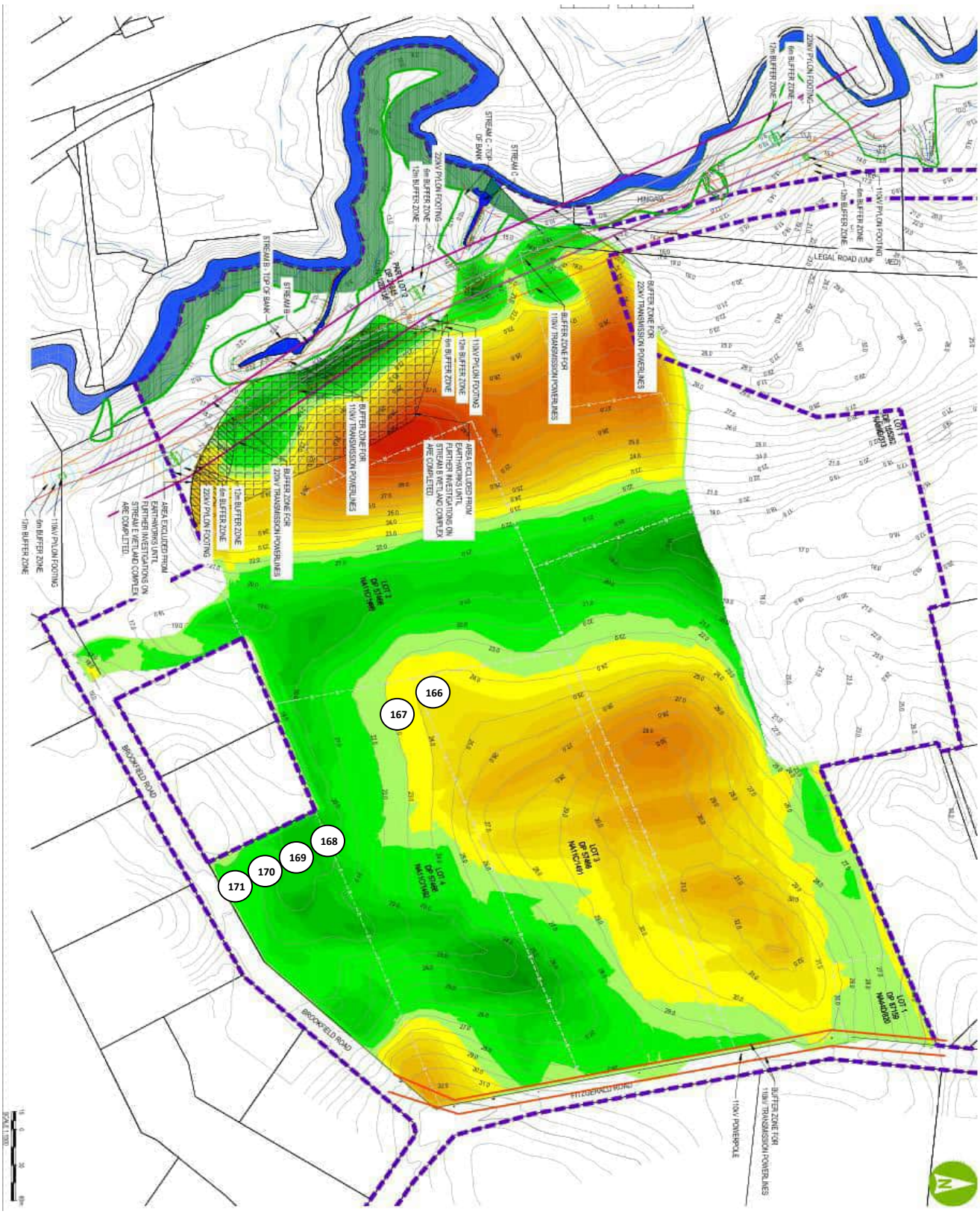
Job Name : **Drury Town Centre**
Location : **-**

Site Plan - Not to scale



Tested By :	DT	Date :	28.03.23
Checked By :	KH	Date :	29.03.23

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Revision : 2

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 47
Date of Order : 29.04.22

ACCREDITED IANZ TESTING LABORATORY

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Ed Cull

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
194	JR	28.04.23	See Plan	150	1.80	44.0	1.25	2.54	0.0	0.0	1.08	115	214	193	189	171	20.44	Easting - 416815.046
					1.81	46.4	1.23	2.54	0.0									Northing - 774339.381
195	JR	28.04.23	See Plan	150	1.76	51.6	1.16	2.54	0.0	0.0	1.08	106	150	146	198	159	21.31	Easting - 416838.006
					1.73	53.9	1.12	2.54	0.0									Northing - 774112.672
196	JR	28.04.23	See Plan	150	1.80	43.4	1.25	2.54	0.0	0.0	1.08	114	167	154	193	171	29.30	Easting - 416841.934
					1.79	47.3	1.22	2.54	0.0									Northing - 774075.627
197	JR	28.04.23	See Plan	150	1.76	51.1	1.16	2.54	0.0	0.0	1.08	106	150	154	150	158	19.24	Easting - 416856.068
					1.75	55.9	1.12	2.54	0.0									Northing - 773994.782

Checked By: DT
Date: 03.05.23
Page: 1 of 1

NT = Not Tested

ROADTEST LTD

RS009
Revision : 2

15B Foundry Road, Silverdale 0932
PROVISIONAL RESULTS - SUBJECT TO VALIDATION

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0100
Date of Order : 29.04.22

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	WET DENSITY (Average) (t/m^3)	OVEN WATER CONTENT (%)	OVEN WATER CONTENT (Average) (%)	DRY DENSITY (t/m^3)	DRY DENSITY (Average) (t/m^3)	SOLID DENSITY (t/m^3) Measured	AIR VOIDS %	AIR VOIDS (Average) %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
1	AS	02.05.22	See Plan	150	1.68	1.69	40.4	42.7	1.19	1.18	2.54	4.8	3.0	1.13	104.5	182	212++	212++	212++	-	SRP 5 - Cut area
					1.70		45.1		1.17			1.3									
2	AS	02.05.22	See Plan	150	1.64	1.68	28.4	32.1	1.28	1.28	2.54	13.2	8.9	1.13	112.8	212++	212++	212++	212++	-	SRP 5 - Cut area
					1.73		35.8		1.27			4.5									
3	AS	02.05.22	See Plan	150	1.77	1.77	33.1	37.9	1.33	1.28	2.54	3.8	1.9	1.13	113.4	212++	212++	212++	212++	-	SRP 5 - Fill area
					1.77		42.6		1.24			0.0									
4	AS	02.05.22	See Plan	150	1.83	1.84	29.7	33.9	1.41	1.38	2.54	2.7	1.3	1.13	121.7	212++	212++	212++	212++	-	SRP 5 - Fill area
					1.86		38.1		1.34			0.0									
5	AS	02.05.22	See Plan	150	1.67	1.64	42.1	45.4	1.17	1.13	2.54	4.4	4.4	1.13	99.8	212++	212++	212++	212++	-	SPR 6 - Fill Area
					1.61		48.8		1.08			4.5									
6	AS	02.05.22	See Plan	150	1.80	1.78	34.1	38.0	1.34	1.29	2.54	1.3	0.6	1.13	114.0	212++	212++	212++	212++	-	SPR 6 - Fill Area
					1.75		41.8		1.24			0.0									
7	AS	02.05.22	See Plan	150	1.64	1.62	54.5	61.4	1.06	1.00	2.54	0.2	0.1	1.13	88.7	167	167	185	212+	-	SPR 6 - Cut Area
					1.60		68.4		0.95			0.0									
8	AS	02.05.22	See Plan	150	1.74	1.72	36.2	41.6	1.27	1.21	2.54	3.7	2.0	1.13	107.3	212++	212++	212++	212++	-	SPR 6 - Cut Area
					1.70		46.9		1.15			0.4									
9	AS	16.05.22	See Plan	150	1.56	1.58	43.8	45.6	1.09	1.08	2.54	9.7	8.1	1.13	95.7	201++	201++	201++	201++	16.69	Lift 2
					1.59		47.3		1.08			6.5									
10	AS	16.05.22	See Plan	150	1.63	1.62	55.7	59.3	1.05	1.02	2.54	0.2	0.1	1.13	90.2	201++	201++	201++	201++	16.48	Lift 2
					1.61		62.8		0.99			0.0									
11	AS	16.05.22	See Plan	150	1.78	1.79	37.9	36.9	1.29	1.31	2.54	0.1	0.1	1.13	115.9	201++	201++	201++	201++	16.13	Lift 1
					1.81		36.0		1.33			0.0									
12	AS	16.05.22	See Plan	150	1.68	1.68	53.7	52.9	1.09	1.10	2.54	0.0	0.0	1.13	97.5	201+	201+	201+	201+	16.21	Lift 1
					1.69		52.1		1.11			0.0									
13	AS	16.05.22	See Plan	150	1.67	1.66	56.5	56.9	1.07	1.06	2.54	0.0	0.0	1.13	93.9	201+	201+	201+	201+	16.57	Lift 2
					1.66		57.4		1.06			0.0									
14	AS	16.05.22	See Plan	150	1.62	1.61	49.3	53.0	1.09	1.05	2.54	3.5	2.7	1.13	93.2	201+	201+	201+	201+	16.60	Lift 2
					1.60		56.8		1.02			1.9									

Checked By:
Date:
Page: 1 of

NT = Not Tested

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152C Foundry Road, Silverdale 0932

PROVISIONAL RESULTS - SUBJECT TO VALIDATION

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101
Date of Order : 29.04.22

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
15	DT	12.10.22	See Plan	150	1.63	59.4	1.02	2.54	0.0	0.0	1.13	88	214+	214+	174	158	21.13	
					1.60	64.7	0.97	2.54	0.0									
16	DT	12.10.22	See Plan	150	1.66	41.5	1.17	2.54	5.4	5.1	1.13	104	214+	214+	214+	214+	21.14	
					1.67	41.2	1.18	2.54	4.8									
17	DT	12.10.22	See Plan	150	1.60	59.4	1.01	2.54	0.7	1.6	1.13	89	153	89	158	72	21.16	
					1.58	58.0	1.00	2.54	2.4									
18	DT	12.10.22	See Plan	150	1.65	43.3	1.15	2.54	5.0	3.7	1.13	103	140	214+	157	157	27.87	
					1.70	42.7	1.19	2.54	2.5									
19	DT	13.10.22	See Plan	150	1.71	45.4	1.18	2.54	0.2	0.8	1.13	105	178	160	214+	214+	27.85	
					1.71	43.4	1.19	2.54	1.4									
20	DT	13.10.22	See Plan	150	1.65	52.3	1.08	2.54	0.7	2.3	1.13	97	210	157	214+	214+	26.89	
					1.64	46.5	1.12	2.54	3.9									

Checked By:
Date:
Page: 1 of

NT = Not Tested

152C Foundry Road, Silverdale 0932

FILL CONTROL SUMMARY SHEET

TEST STANDARD - NUCLEAR DENSOMETER, NZS 4407:2015 TEST 4.2; WATER CONTENT, NZS 4402 TEST 2.1; SHEAR VANE, NZ GEOTECHNICAL SOCIETY GUIDELINES INC. 2001

(Please note Air Void calculations are not IANZ endorsed as part of this report)

Job Name : **Drury Town Centre**
Client : Ross Reid Contractors Ltd
Address : PO Box 58545
Botany
Attention : Deon DeRidder

Project No. : 22 0101 02
Date of Order : 29.04.22

Test results indicated as not accredited are outside the scope of the laboratory's accreditation

Signatory - Zach Hooton

TEST NUMBER	TESTED BY	DATE TESTED	TEST LOCATION	TEST DEPTH (mm)	WET DENSITY (t/m^3)	OVEN WATER CONTENT (%)	DRY DENSITY (t/m^3)	SOLID DENSITY (t/m^3) Supplied	AIR VOIDS %	AVERAGE AIR VOIDS %	MDD (t/m^3) Supplied	MDD (%)	FIELD SHEAR STRENGTH in kPa				RL (m)	NOTES
15	DT	12.10.22	See Plan	150	1.63	59.4	1.02	2.54	0.0	0.0	1.13	88	214+	214+	174	158	21.13	East - 417078.376
					1.60	64.7	0.97	2.54	0.0									North - 774066.607
16	DT	12.10.22	See Plan	150	1.66	41.5	1.17	2.54	5.4	5.1	1.13	104	214+	214+	214+	214+	21.14	East - 417139.411
					1.67	41.2	1.18	2.54	4.8									North - 774066.607
17	DT	12.10.22	See Plan	150	1.60	59.4	1.01	2.54	0.7	1.6	1.13	89	153	89	158	72	21.16	East - 417148.648
					1.58	58.0	1.00	2.54	2.4									North - 774116.060
18	DT	12.10.22	See Plan	150	1.65	43.3	1.15	2.54	5.0	3.7	1.13	103	140	214+	157	157	27.87	East - 417227.887
					1.70	42.7	1.19	2.54	2.5									North - 774298.292

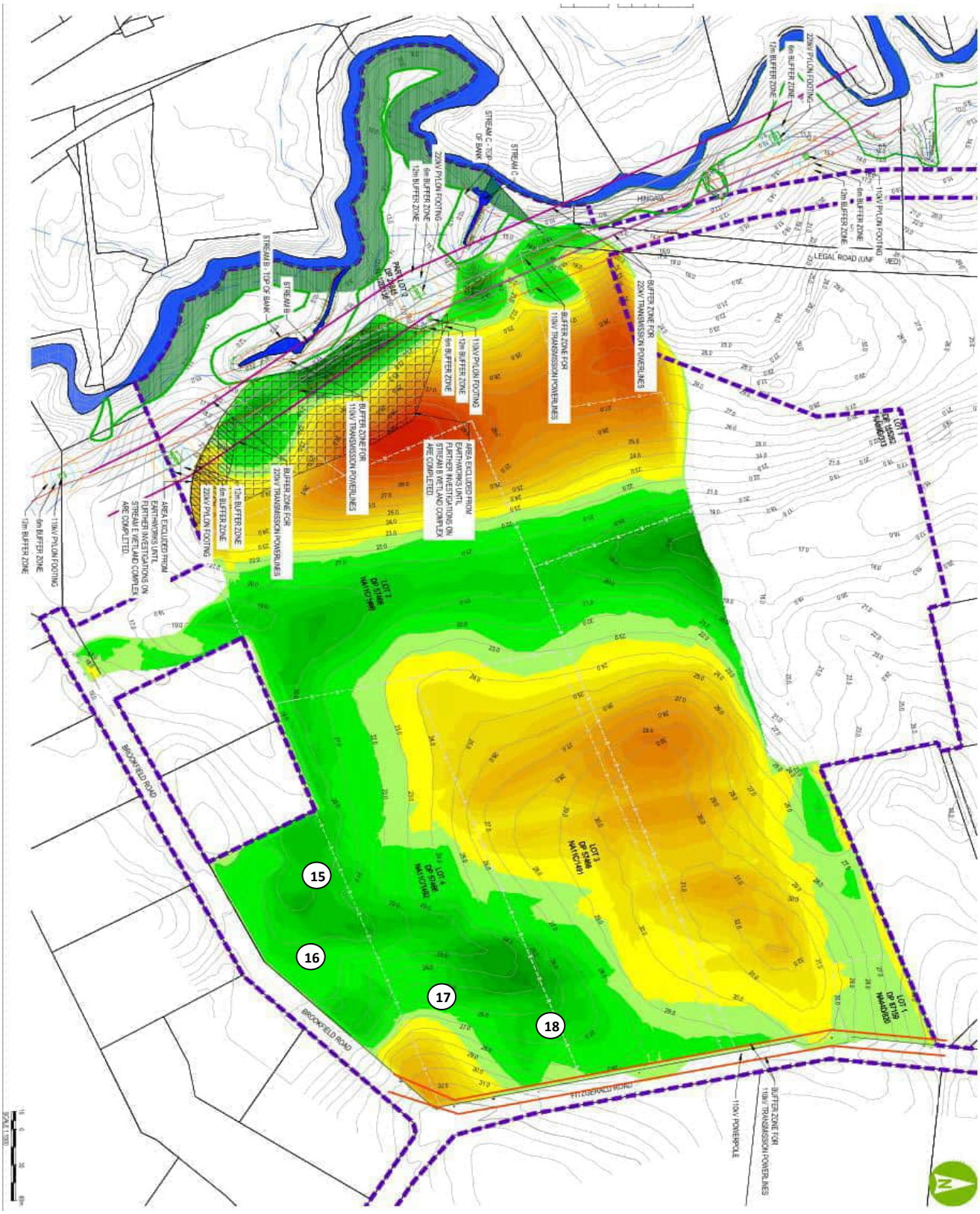
Checked By: ZH
Date: 19.10.22

NT = Not Tested

Report No : 22 0101 02
Page : 2 of 2

Job Name : **Drury Town Centre**
Location :

Site Plan - Not to scale



Tested By : DT Date : 12.10.22
Checked By : ZH Date : 19.10.22

ROADTE

WS014

Revision: 1

152C Foundry Road, Silverdale 0932
Phone: Zach Hooton - 021 323 193 ; Ed Cull - 021 323 128

DETERMINATION OF THE CLEGG IMPACT VALUE (CIV)
TEST METHOD ASTM D 5874
PROVISIONAL RESULTS - SUBJECT TO VALIDATION

Job: Drury Town Centre
Client Reids
Date of Order : 1/11/22
Location : Reinder Salt Pit Rtn

Report No:
Page: 1 of 2
Layer Tested

TEST	CHAINAGE (m)	DAR (m)	CIV	Equiv. CBR	TEST	CHAINAGE (m)	DAR (m)	CIV	Equiv. CBR
1	—		23						
2	—		28						
3	—		27						

Comments : Equiv. CBR = $0.07 \times (CIV)^2$

KEY:		
	DAR	Distance Across Road from *edge of shoulder/*edge of kerb/*centreline
	CIV	Clegg Impact Value (*Delete inappropriate words)
	LHS	Left hand side
	RHS	Right hand side

Tested By : DT Date : 2/11/22
Checked By : Date :

Name :

cation : Drury Town Centre Sale pt Run

Page :

Site Plan - Not to scale

Tested By : DT Date : 2/11/22

Checked By : Date :

152C Foundry Road, Silverdale 0932
Phone: Zach Hooton - 021 323 193 ; Ed Cull - 021 323 128

DETERMINATION OF THE CLEGG IMPACT VALUE (CIV)
TEST METHOD ASTM D 5874
PROVISIONAL RESULTS - SUBJECT TO VALIDATION

Job: Drury Town Centre
Client Reids
Date of Order : 3/11/22
Location : Refer to site plan

Report No:
Page: 1 of 2
Layer Tested SPR

TEST	CHAINAGE (m)	DAR (m)	CIV	Equiv. CBR	TEST	CHAINAGE (m)	DAR (m)	CIV	Equi
1	–		22						
2	–		28						
3	–		21						

Comments : Equiv. CBR = 0.07 x $(CIV)^2$

KEY:		
	DAR	Distance Across Road from *edge of shoulder/*edge of kerb/*centreline
	CIV	Clegg Impact Value (*Delete inappropriate words)
	LHS	Left hand side
	RHS	Right hand side

Tested By : DT
Checked By : Date : 4/11/22
Date :

Job Name : Drury Town Centre
Location :

Site Plan - Not to scale

Tested By : DT
Checked By :

Date : 4/11/22
Date :

Site Inspection Reports

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Site Inspection Record

Project Number	**510611**	Date	**12 October 2022**
Project Name	**Drury Precinct**	From	**Suresh Nuthalapati**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Sunny**		

SUBJECT **Drury Precinct – Site Inspection**

General

An Aurecon Ground Engineering Consultant attended site on 11 October 2022 to observe the site works undertaken to date. The purpose of the inspection was to inspection topsoil strip and subgrade surface.

Representatives from Ross Reid Contractors were present during the inspection.

Site Observations and Discussions

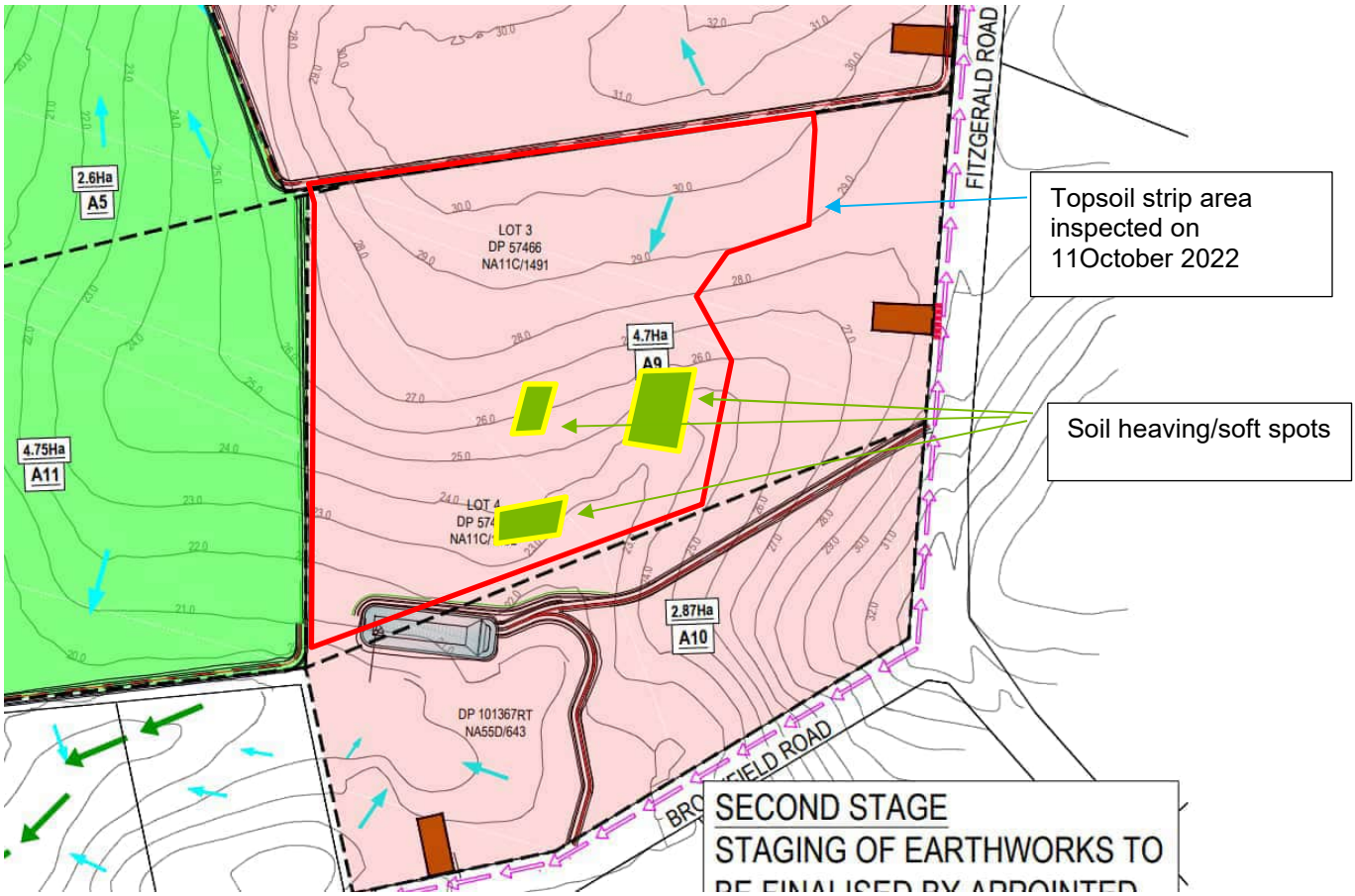
- Part of the Lot 4 DP 57466 (Area 1A9) had been stripped on 11th October 2022 and inspected by a Ground Engineering consultant from Aurecon (Figure 1).
- Topsoil has been stripped. Approximately 0.3-0.4m of the topsoil was stripped across the area of inspection.
- The underlying subgrade was firm underfoot.
- Soil heaving/soft spots were observed at three locations in the area as marked in the Figure 1.
- The soft spots are ranged between 30-40m in length and 10-15m in width.
- The soft spot located southwest of the inspected area was undercut to 0.5m to examine the soil condition. Silty clays were observed at the base of the cut.

The site features including topsoil strip and soft spots are presented in the photos appended to this report.

Recommendations

- The ground conditions being exposed during the earthworks are as anticipated.
- The soft spots located in the fill area should be undercut to a depth of 0.5m or at level where shear vane values of 100kPa or greater are encountered.
- The undercut to be backfilled using a well graded, clean imported fill approved by the Engineer. A layer of geotextile (A19 or similar) should be placed on the subgrade prior to filling.
- The backfilling of the undercut should be undertaken immediately so excavations are not left open overnight.
- Material from the undercut is to be stockpiled and conditioned for use as bulk filling elsewhere onsite. This may require mixing with other site won material.

Figure 1: Extent of works observed.



PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	11/10/22

Description:
View of the area 1A9 towards northeast.

Photo No.	Date:
2	11/10/22

Description:
View of the area 1A9 towards north. Area circled in red indicates a soft spot. The area is part of the cut. The soft/wet soils will be mixed with dry soils at later stage. **No action required from Aurecon.**

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3	11/10/22

Description:

View of the area 1A9 towards northwest.

Photo No.	Date:
4	11/10/22

Description:

View of the area 1A9 towards east. The area circled in the red indicates the soft spot/wet soils.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
5	11/10/22

Description:

View of the soils underneath the topsoil. Sandy SILT with minor clay.

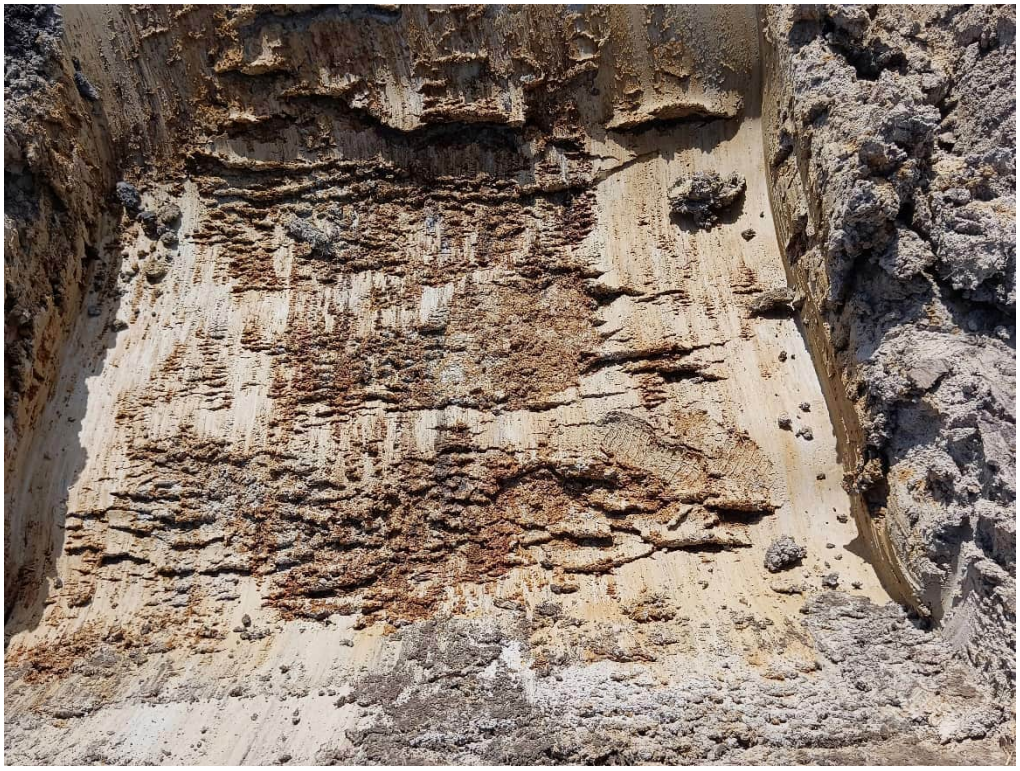
Photo No.	Date:
6	11/10/22

Description:

View of the base of the soft spot at 0.5m below the surrounding area.

Ross Reid planned to conduct shear vanes and scala testing on 12 October.

Perch water seeped into the pit, unable to test.



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Site Inspection Record

Project Number	**510611**	Date	**13 October 2022**
Project Name	**Drury Precinct**	From	**Suresh Nuthalapati**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Sunny**		

SUBJECT **Drury Precinct – Site Inspection**

General

An Aurecon Ground Engineering Consultant attended site on 12 October 2022 to observe the site works undertaken to date. The purpose of the inspection was to inspection topsoil strip and subgrade surface.

Representatives from Ross Reid Contractors were present during the inspection.

Site Observations and Discussions

- Part of the Lot 4 DP 57466 (Area 2A9) and Stormwater Retention Pond (SRP) 4 had been stripped on 12th October 2022. In addition, a soft spot observed in southwestern corner of the 1A9 area was undercut to the extent of length and width, to conduct geotechnical testing. The site observations were noted by a Ground Engineering consultant from Aurecon (Figure 1).

Area 2A9:

- Topsoil has been stripped from 2A9. Approximately 0.3-0.4m of the topsoil was stripped across the area of inspection.
- The underlying subgrade was firm underfoot.
- According to Ross Reid, the geotechnical tests (Nuclear Densometer and shear vane) conducted in 2A9 area complied with the specification requirements.
- Soil heaving/soft spots were not evident during the inspection. However, a potential soft spot was observed towards the southern portion of the area as marked in the Figure 1. The soft spot ranged between 20-30m in length and 10m in width. We understand that testing was undertaken of this area and testing results indicate the ground is competent.

Area 1A9 (soft sport undercut):

- The soft spot located southwest of the inspected area in 1A9 was undercut to 0.5m across the length and width (28m by 10m) to examine the soil condition.
- Perch water was observed toward the southwestern corner of the excavated area. No visual or olfactory evident of contaminants observed in the water.
- Shear vane readings were ranged between 25 to 140+ kPa (uncorrected). The lower bound shear vane readings were typically in localised areas.
- The underlaying subgrade in the excavated area was firm underfoot.

SRP4:

- Topsoil was stripped from the base of the SRP4. Approximately 0.15 – 0.2m of the topsoil was stripped across the area of inspection.
- The subgrade observed underneath the topsoil consist of silty clay with fresh roots and rootlets.

- According to Ross Reid contractors, shear vane readings were ranged between 25 to 60 kPa.
- A trench was excavated across SRP4 to divert the surface and perch water to a pit along the embankment towards 69 Brookfield Road.
- The embankment towards the south of the SRP4 comprised of reworked fill to 2m depth underlain by topsoil.

We understand the plan for SRP4 is that Ross Reid will strip the topsoil, bring in site won to build the pond to 2m high, compact the fill in layers to achieve the required compaction standards. Then dig out a hole in the middle to convert it into a retention pond. The reason for achieving the proposed pond embankment compaction standards is that the pond can hold the sediment and water during construction and can be backfilled at the end of construction, to form part of the permanent earthworks.

The site features including topsoil strip from A9 and SRP4 are presented in the photos appended to this report.

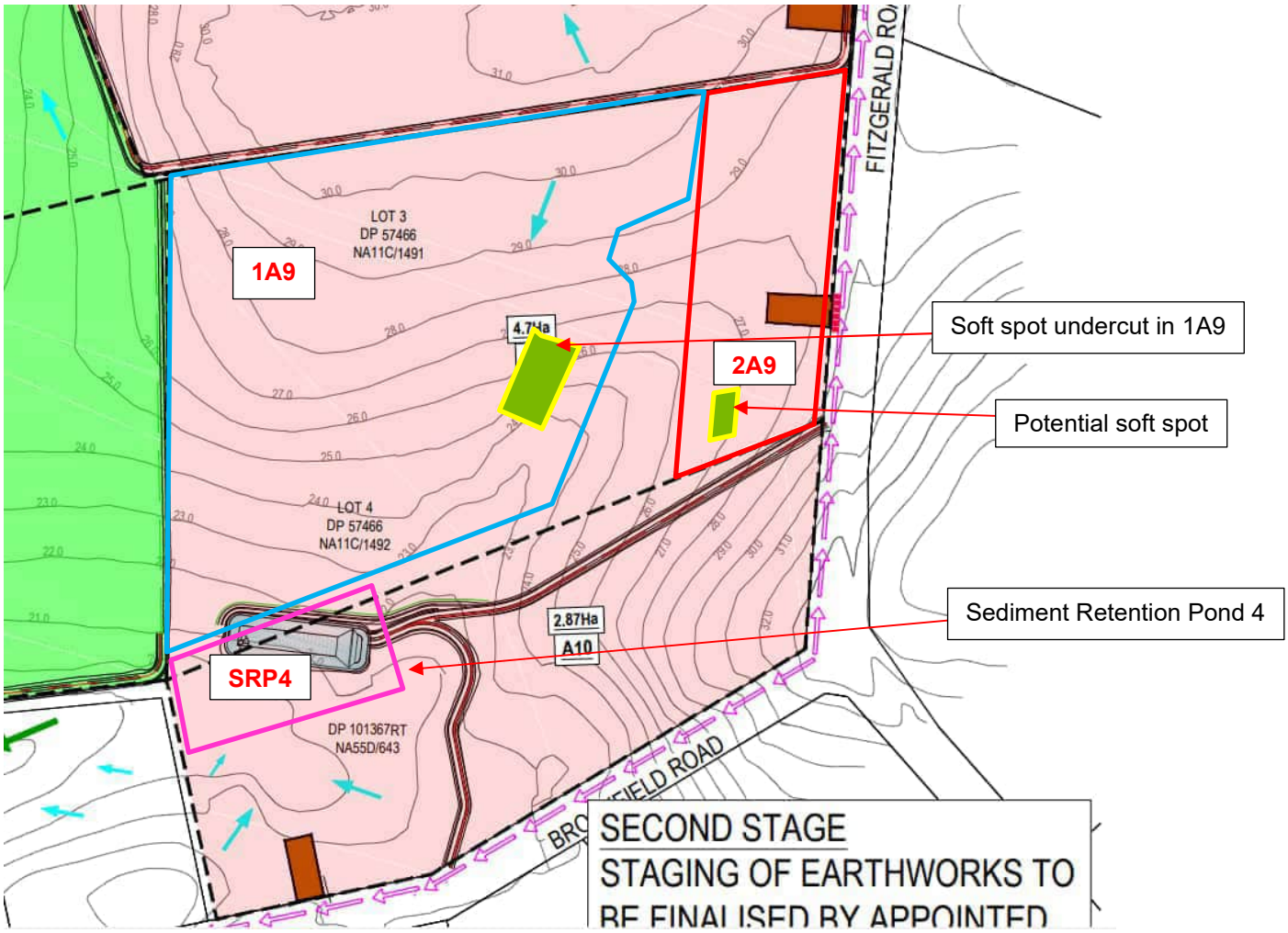
Recommendations

- The subgrade, where undercutting is not required, is suitable for fill placement.
- The perch water retained in the 1A9 soft spot undercut should be pumped out to a retention pond located in SRP4 area.
- The undercut to be backfilled using a well graded, clean imported fill approved by the Engineer. A layer of geotextile (A19 or similar) should be placed on the subgrade prior to filling. Fill shall comprise a GAP65 type material. Contractor is to confirm the source material and provide laboratory testing (Compaction curve and particle size distribution). As excavation is approximately 0.5m deep, backfill material is to be placed as follows:

    - Place geotextile.
    - Place 300mm layer of backfill
    - Static roll the first layer.
    - Place 200mm of backfill material and compact with vibration.
    - Contractor to monitor compaction to ensure it is not over compacted.
    - NDM testing to be completed on top surface of backfilled materials. Compaction to achieve 95% of MDD.

- The backfilling of the undercut should be undertaken immediately so excavations are not left open overnight.
- Material from the undercut is to be stockpiled and conditioned for use as bulk filling elsewhere onsite. This may require mixing with other site won material.
- For SRP4 we understand the embankments for the pond will form part of the permanent earthworks. Therefore, the excavations for the embankments shall be cleared of topsoil, organic material (include roots) and soft spots, prior to the embankment fill being placed.
- If the soft spot in Area 2A9 deteriorates then this area may require undercutting.
- NDM and shear vane test results of the subgrade to be supplied to Aurecon.

Figure 1: Extent of works observed.



PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	12/10/22

Description:
View of the area 2A9 facing south towards Brookfield Road.

Photo No.	Date:
2	12/10/22

Description:
View of the area 2A9 facing north towards site office along the Fitzgerald Road

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3	12/10/22

Description:

View of the area 2A9 towards north with possible heaving/soft spots appearing in the foreground.

Photo No.	Date:
4	12/10/22

Description:

View of the area 1A9 with one of the soft spots/heaved areas undercut to 0.5m for testing the soil strength.

The perch water can be observed in the pit.

Shearvane readings ranged from 25 to 140+ kPa.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
5	12/10/22

Description:

View of the area 1A9 undercut soft spot geology in closeup (Clayey SILT, some fine sand).

Photo No.	Date:
6	12/10/22

Description:

View of the area 1A9 undercut soft spot being waterlogged towards south eastern corner.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
7	12/10/22

Description:

View of the SRP4 topsoil being excavated. The embankment from the former dwelling at 61 Brookfield Road can be seen in the background.

Photo No.	Date:
8	12/10/22

Description:

View of the SRP4 surface area after removing topsoil.

Shear vane readings ranged between 25 to 60 kPa.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
9	12/10/22

Description:

View of the SRP4 embankment with reworked fill underlain by topsoil at the base.

Photo No.	Date:
10	12/10/22

Description:

Closeup view of the embankment with topsoil overlaid by reworked fill.

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Site Inspection Record

Project Number	**510611**	Date	**17 October 2022**
Project Name	**Drury Precinct**	From	**Brent Wilson**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Sunny**		

SUBJECT **Drury Precinct – Site Inspection**

General

An Aurecon Ground Engineering Consultant attended site on 14 October 2022 to observe the site works undertaken to date. The purpose of the inspection was to inspection topsoil strip and subgrade surface.

Representatives from Ross Reid Contractors were present during the inspection.

Site Observations and Discussions

- Part of the Lot 4 DP 57466 (Area A9) had been stripped on 14th October 2022. The approximate location of the site observed is noted in as the yellow hatched area in Figure 1.

Area A9:

- Topsoil has been stripped from an area bordering A9. Approximately 0.3-0.4m of the topsoil was stripped across the area of inspection.
- The underlying subgrade was firm underfoot.
- Negligible amounts of topsoil were in evident across the site on the ground surface. This was attributed to the 'sticking' of the material to the wheels of the Caterpillar scrapers during wet days immediately prior to the topsoil removal.
- Heaving was observed across the area of inspection. The heaving was a result of heavy vehicle passage on a freshly exposed subgrade on a rainy day.

At the time of this inspection the plan for the area noted to be heaving was to leave to see if dries out.

Based on a subsequent inspection on 19th October 2022 the area is drying and was firm under dump truck movement. It is expected this will improve with continual drier weather and should be suitable for filling. Contractor can monitor this area and advise Aurecon if it does not dry out.

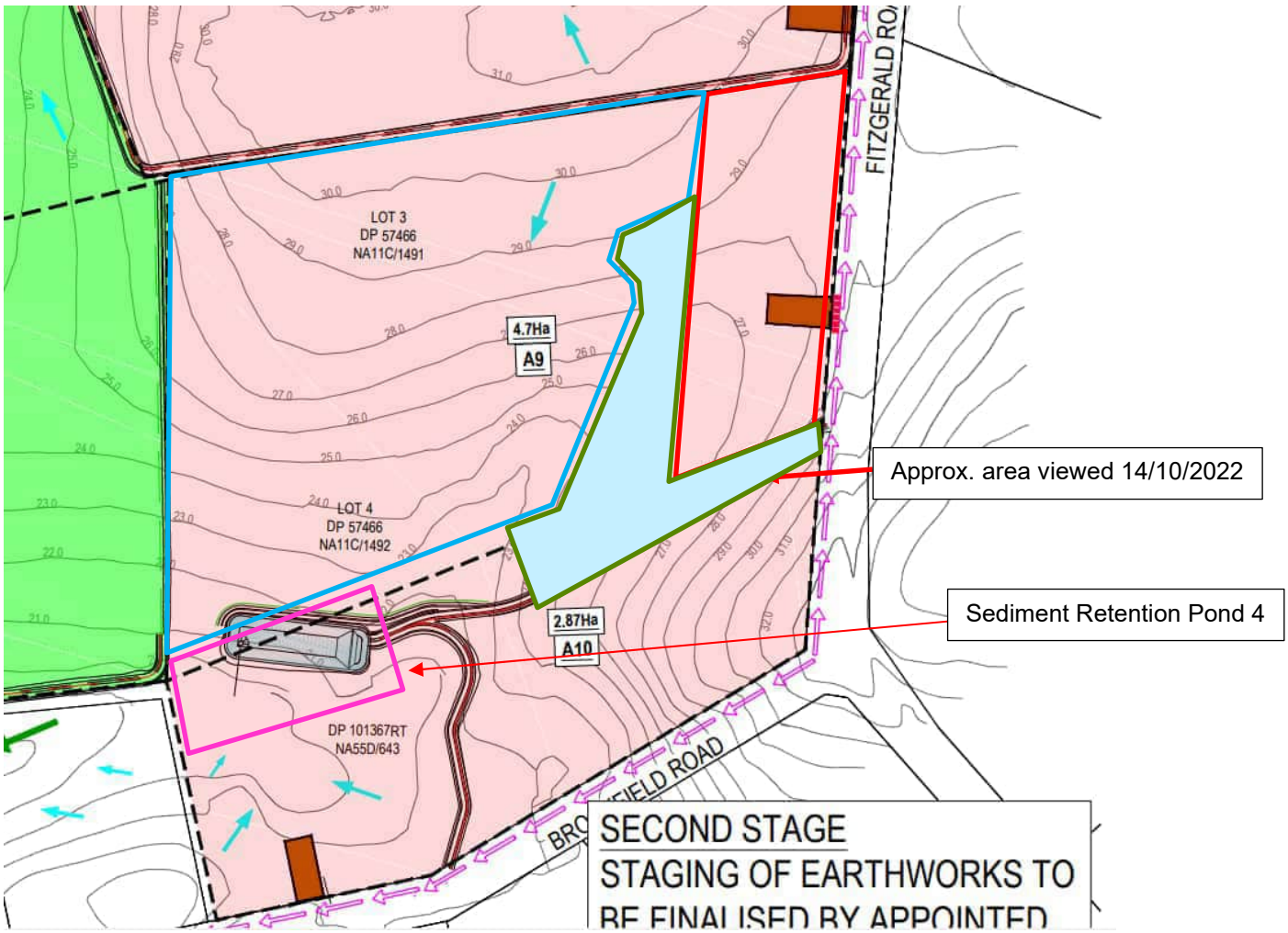

Figure 1: Extent of works observed.

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Site Inspection Record

Project Number	**510611**	Date	**19 October 2022**
Project Name	**Drury Precinct**	From	**Suresh Nuthalapati**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Sunny**		

SUBJECT **Drury Precinct – Site Inspection**

General

An Aurecon Ground Engineering Consultant attended site on 19 October 2022 to observe the site works undertaken to date. The purpose of the inspection was to inspected the topsoil strip and subgrade surface.

Representatives from Ross Reid Contractors were present during the inspection.

Site Observations and Discussions

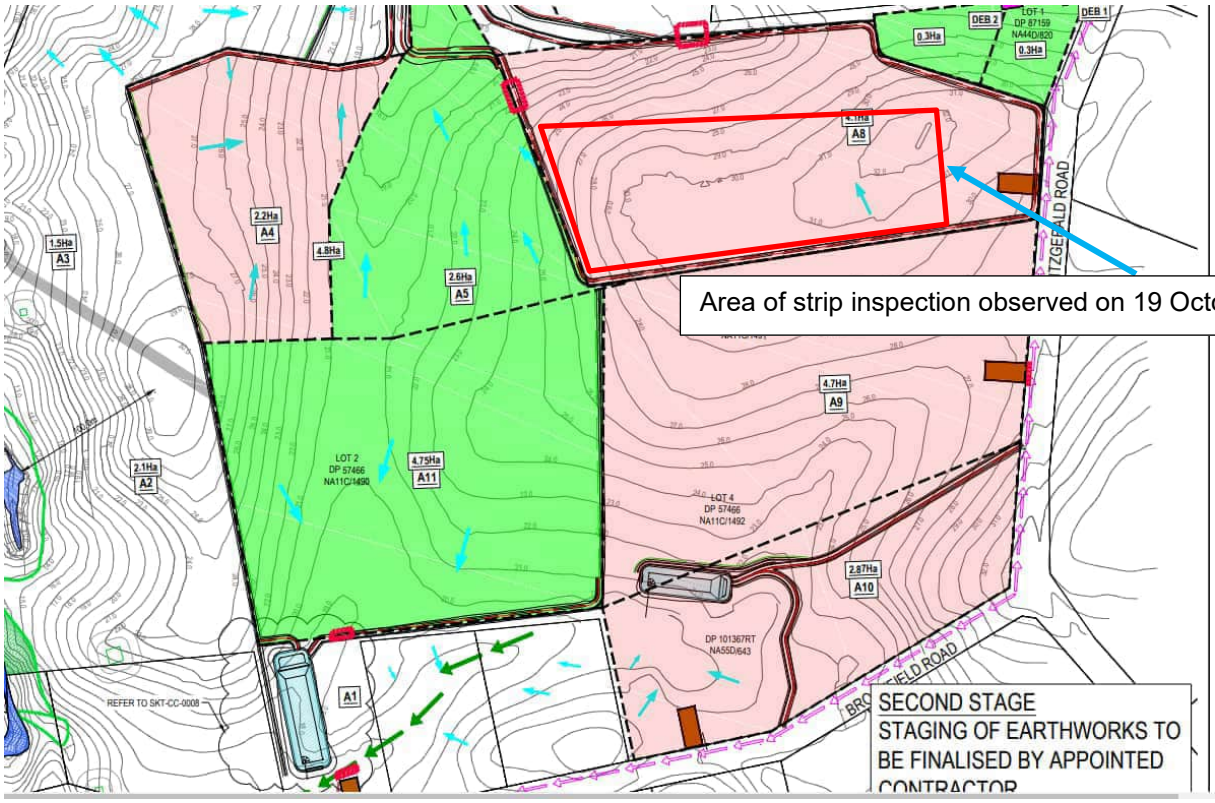
- Part of the Lot 3 DP 57466 (Area A8) had been stripped on 19 October 2022. The site observations were noted by a Ground Engineering consultant from Aurecon (Figure 1).
- Topsoil has been stripped from A8. Approximately 0.3-0.4m of the topsoil was stripped across the area of inspection.
- The underlying subgrade was firm underfoot.
- Evidence of heavy haulage vehicle passage was observed across the stripped area as part of the initial compaction.
- Soil heaving/soft spot was observed at one location towards west during the inspection. However, the entire stripped area is to be excavated to 3.0m bgl as part of the cut/fill for the bulk earthworks.
- Import fill has been stockpiled in A8 to backfill the undercut strip from 1A9.
- The large volume of perch water observed in the 1A9 undercut strip had dissipated by 19 October.

The site features including topsoil strip from A8 is presented in the photos appended to this report.

Recommendations

- The subgrade, where the excavation is required, is suitable to be used as fill elsewhere on site.
- The remaining perch water retained in the 1A9 soft spot undercut should be pumped out to a retention pond located in SRP4 area, if required. The undercut to be backfilled as per the recommendation made in SIR report dated 12 October 2022.
- Material from the A8 excavation is to be stockpiled and conditioned, if required, for use as bulk filling elsewhere onsite.

Figure 1: Extent of works observed.



PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	19/10/22

Description:
View of the area A8 facing west towards 120 Flanagan Road.

No soft spots are heaving observed during the inspection.

Approximately 3.0m cut to be actioned in the current area of inspection.

Photo No.	Date:
2	19/10/22

Description:
View of the area A8 facing south towards A9.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3	19/10/22

Description:

View of the area A8 facing east towards Fitzgerald Road.

Photo No.	Date:
4	19/10/22

Description:

View of the area A8 facing west towards Ross Reid lay down area.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
5	19/10/22

Description:

View of the import fill facing towards area 1A9. The import fill will be used to backfill the undercut in 1A9 area.

Photo No.	Date:
6	19/10/22

Description:

View of the area A8 with soft spot. The existing subgrade to be undercut to 3.0m bgl as part of the bulk earthworks

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Site Inspection Record

Project Number	**510611**	Date	**4 November 2022**
Project Name	**Drury Precinct**	From	**Suresh Nuthalapati**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**5**
Weather	**Sunny**		

SUBJECT **Drury Precinct – Site Inspection**

General

An Aurecon Ground Engineering Consultant attended site on 26 October 2022 to observe the site works undertaken to date. The purpose of the inspection was to inspect the topsoil strip and subgrade surface.

Representatives from Ross Reid Contractors were present during the inspection.

Site Observations and Discussions

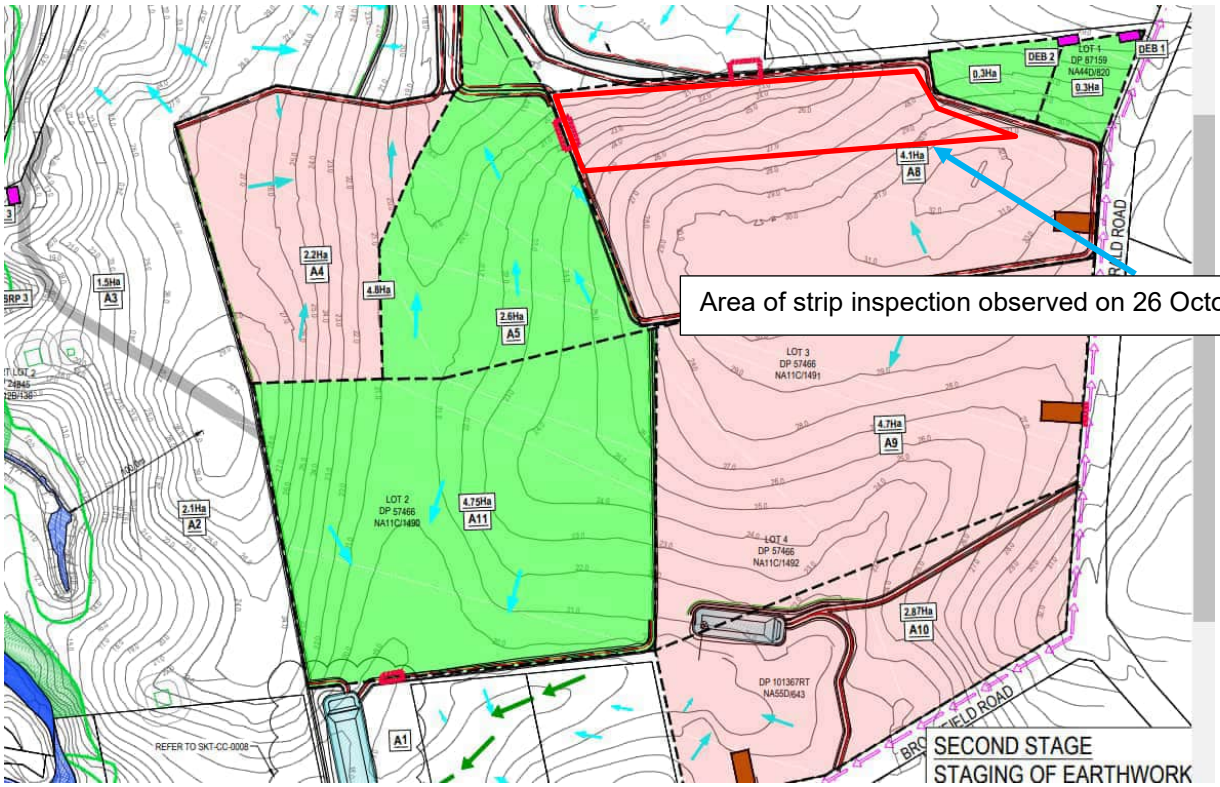
- Part of the Lot 3 DP 57466 (Area 2A8) had been stripped on 26 October 2022. The site observations were noted by a Ground Engineering consultant from Aurecon (Figure 1).
- Topsoil has been stripped from 2A8. Approximately 0.3-0.4m of the topsoil was stripped across the area of inspection.
- The underlying subgrade was firm underfoot.
- Evidence of heavy haulage vehicle passage was observed across the stripped area as part of the initial compaction.
- Soil heaving/soft spots were not observed during the inspection. The entire stripped area is to be excavated up to 3.0m bgl as part of the cut/fill for the bulk earthworks.
- Topsoil from A8, A9 and A10 were stockpiled on the north-eastern corner of area 2A8 for onsite use.
- Gravel and thin strip of asphalt was observed underneath the topsoil close to the former 133 Fitzgerald Road. The asphalt and gravel could be former driveway to the residential dwelling.
- Gravel receding from the farm track appeared underneath the topsoil at certain locations across the area 2A8.

The site features including topsoil strip from 2A8 is presented in the photos appended to this report.

Recommendations

- The subgrade, where the excavation is required, is suitable to be used as fill elsewhere on site.
- Material from the A8 excavation is to be stockpiled and conditioned, if required, for use as bulk filling elsewhere onsite.
- The gravel and asphalt observed across the area 2A8 to be stripped and stockpiled as unsuitable. The unsuitable to be used to backfill the silage pit as discussed during the monthly site meeting on 1 November 2022.

Figure 1: Extent of works observed.



PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	26/10/22

Description:
View of the area 2A8 facing east towards Fitzgerald Road. Gravel Farm track can be seen on the right along the strip.

No soft spots are heaving observed during the inspection.

Approximately 3.0m cut to be actioned in the current area of inspection.

Photo No.	Date:
2	26/10/22

Description:
View of the gravel scattered below the topsoil was observed across the strip site.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3	26/10/22

Description:

View of the area 2A8 facing west towards Area A5.

Area A5 to be ready for topsoil strip inspecting in the first week of November.

Photo No.	Date:
4	26/10/22

Description:

View of the area 2A8 facing east towards Ross Reid lay down area.

Gravel can be observed underneath the topsoil.

As per Reid contractors, the gravel layer to be excavated and placed on a stockpile deemed as unsuitable.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
5	26/10/22

Description:

View of the topsoil stockpile located towards north-eastern corner of the area 2A8.

Photo No.	Date:
6	26/10/22

Description:

View of the gravel farm track adjacent to Area 2A8.

As per Reid contractors, the gravel extends few meters into Area 2A8 and need to be removed as unsuitable.

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Site Inspection Record

Project Number	**510611**	Date	**4 November 2022**
Project Name	**Drury Precinct**	From	**Suresh Nuthalapati**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**5**
Weather	**Sunny**		

SUBJECT **Drury Precinct – Site Inspection**

General

An Aurecon Ground Engineering Consultant attended site on 26 October 2022 to observe the site works undertaken to date. The purpose of the inspection was to inspect the topsoil strip and subgrade surface.

Representatives from Ross Reid Contractors were present during the inspection.

Site Observations and Discussions

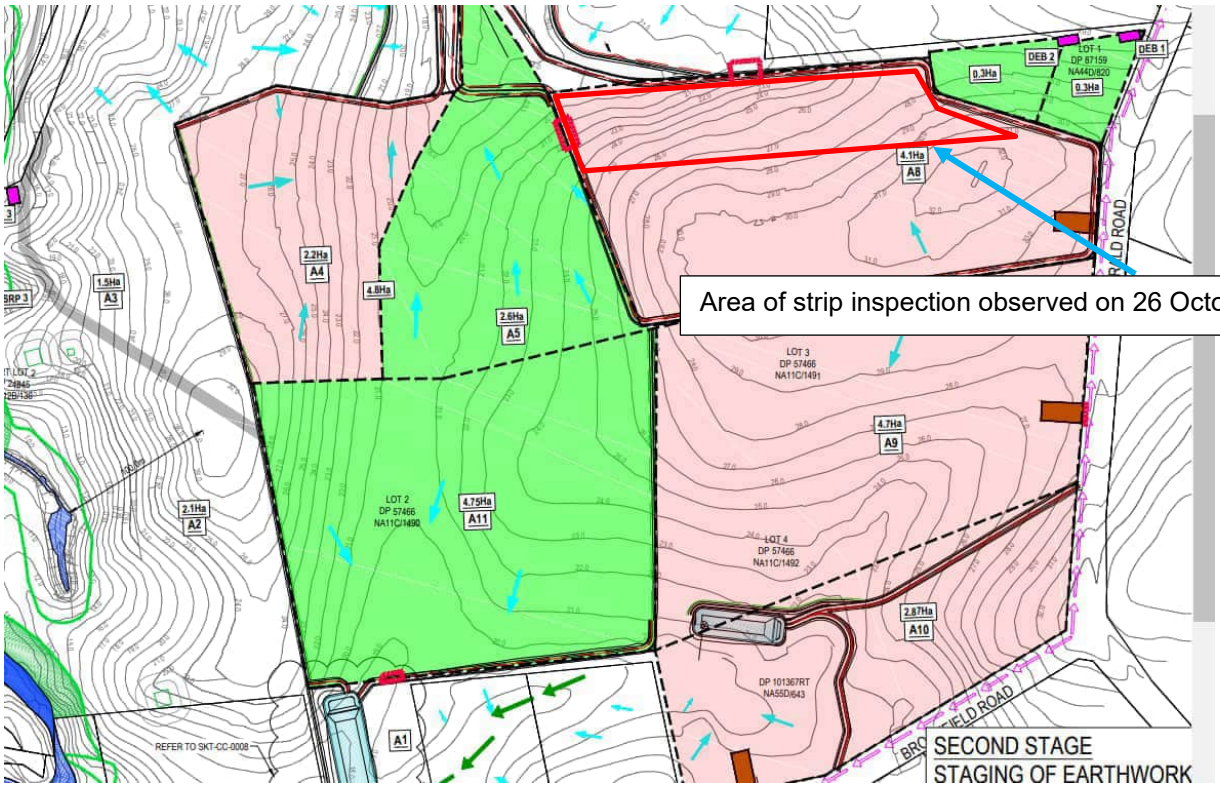
- Part of the Lot 3 DP 57466 (Area 2A8) had been stripped on 26 October 2022. The site observations were noted by a Ground Engineering consultant from Aurecon (Figure 1).
- Topsoil has been stripped from 2A8. Approximately 0.3-0.4m of the topsoil was stripped across the area of inspection.
- The underlying subgrade was firm underfoot.
- Evidence of heavy haulage vehicle passage was observed across the stripped area as part of the initial compaction.
- Soil heaving/soft spots were not observed during the inspection. The entire stripped area is to be excavated up to 3.0m bgl as part of the cut/fill for the bulk earthworks.
- Topsoil from A8, A9 and A10 were stockpiled on the north-eastern corner of area 2A8 for onsite use.
- Gravel and thin strip of asphalt was observed underneath the topsoil close to the former 133 Fitzgerald Road. The asphalt and gravel could be former driveway to the residential dwelling.
- Gravel receding from the farm track appeared underneath the topsoil at certain locations across the area 2A8.

The site features including topsoil strip from 2A8 is presented in the photos appended to this report.

Recommendations

- The subgrade, where the excavation is required, is suitable to be used as fill elsewhere on site.
- Material from the A8 excavation is to be stockpiled and conditioned, if required, for use as bulk filling elsewhere onsite.
- The gravel and asphalt observed across the area 2A8 to be stripped and stockpiled as unsuitable. The unsuitable to be used to backfill the silage pit as discussed during the monthly site meeting on 1 November 2022.

Figure 1: Extent of works observed.



PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	26/10/22

Description:
View of the area 2A8 facing east towards Fitzgerald Road. Gravel Farm track can be seen on the right along the strip.

No soft spots are heaving observed during the inspection.

Approximately 3.0m cut to be actioned in the current area of inspection.

Photo No.	Date:
2	26/10/22

Description:
View of the gravel scattered below the topsoil was observed across the strip site.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3	26/10/22

Description:

View of the area 2A8 facing west towards Area A5.

Area A5 to be ready for topsoil strip inspecting in the first week of November.

Photo No.	Date:
4	26/10/22

Description:

View of the area 2A8 facing east towards Ross Reid lay down area.

Gravel can be observed underneath the topsoil.

As per Reid contractors, the gravel layer to be excavated and placed on a stockpile deemed as unsuitable.

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
5	26/10/22

Description:

View of the topsoil stockpile located towards north-eastern corner of the area 2A8.

Photo No.	Date:
6	26/10/22

Description:

View of the gravel farm track adjacent to Area 2A8.

As per Reid contractors, the gravel extends few meters into Area 2A8 and need to be removed as unsuitable.

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Site Inspection Record

Project Number	**510611**	Date	**14 November 2022**
Project Name	**Drury Precinct**	From	**Bryn Pattison**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Sunny**		**Dry**

SUBJECT **Topsoil Strip Inspection**

Representatives from Aurecon attended site on the 11 November 2022 to inspect an area of subgrade surface post topsoil striping. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Approximately 0.2 ha of the topsoil had been stripped within catchment A8 and top loaded to a stockpile, refer to ***Figure 1: Extent of works observed***,

  The underlying subgrade was firm underfoot,

- An isolated pocket of organic material was identified within the area stripped and scalloped out.

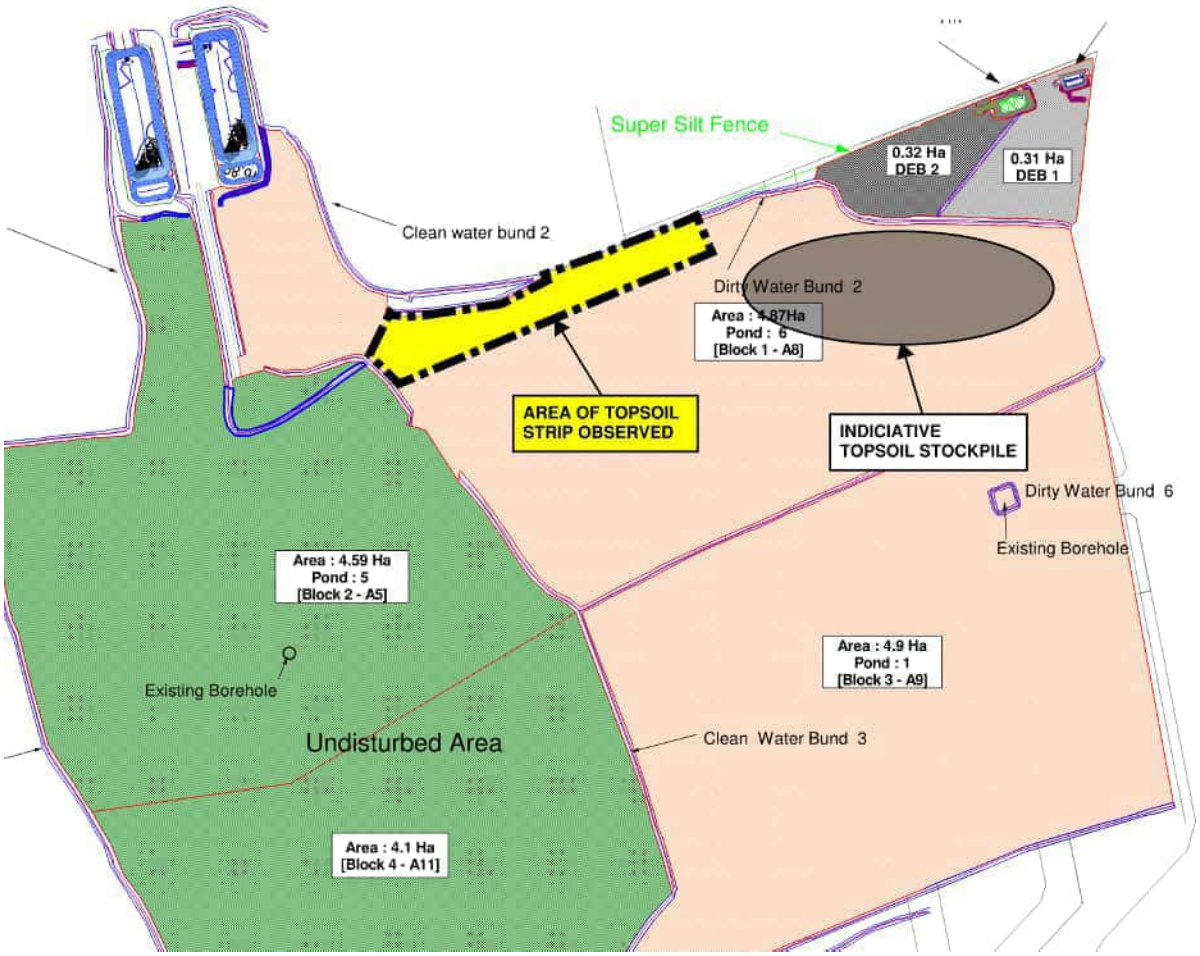
Recommendations

- Tidy up area where organic material was scalloped out with padfoot compactor blade prior to filling.

Closing Comments

The site features including topsoil strip from A8 is presented in the photos appended to this report.

Figure 1: Extent of works observed



PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	11/11/22

Description:
View of the area stripped facing west towards Hingaia stream.

Photo No.	Date:
2	11/11/22

Description:
Isolated soft spot removed.

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Site Inspection Record

Project Number	**510611**	Date	**17 November 2022**
Project Name	**Drury Precinct**	From	**Bryn Pattison**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Raining**		**Wet**

SUBJECT **Topsoil Strip Inspection**

Representatives from Aurecon attended site on the 17 November 2022 to inspect an area of subgrade surface post topsoil striping. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Approximately 0.4 ha of clean topsoil had been stripped within catchment A5 and loaded to a stockpile, refer to ***Figure 1: Extent of works observed***,
- Approximately 0.1 ha of contaminated topsoil had been stripped and taken off-site, refer to ***Figure 1: Extent of works observed***,
- The underlying subgrade was firm underfoot,
- Evidence of heavy haulage vehicle passage was observed across the stripped area as part of the initial compaction and sealing of subgrade,
- Surface water present due to recent rainfall event.

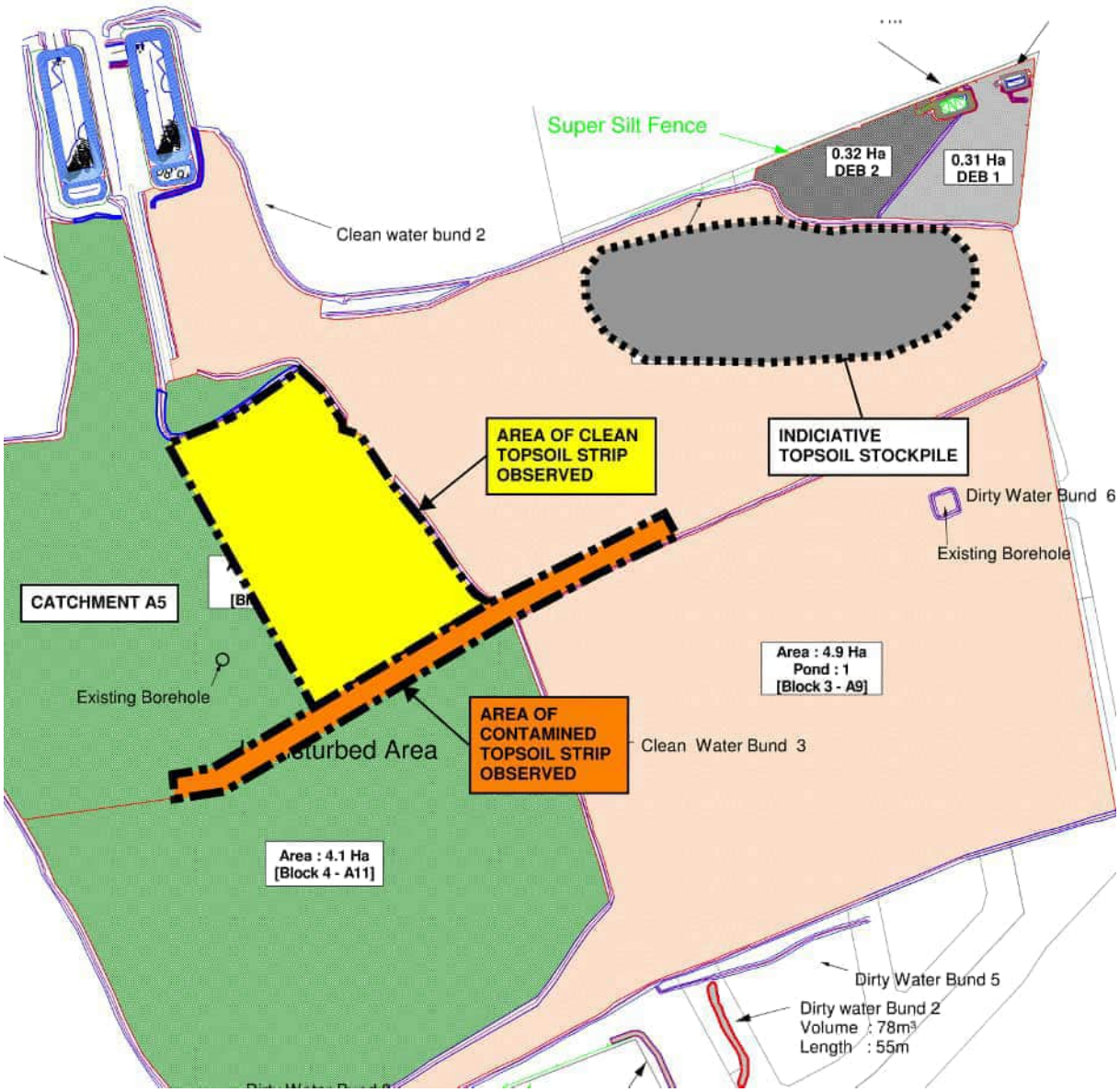
Recommendations

- Hold off on any cut/fill operations until stripped area is dry again.

Closing Comments

The site features including topsoil strip is presented in the photos appended to this report.

Figure 1: Extent of works observed



PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	17/11/22

Description:
View of the area stripped facing North.

Photo No.	Date:
2	17/11/22

Description:
View of the area stripped facing South.

Photo No. 3	Date: 17/11/22

Description:
View of the area stripped facing west towards Hingaia stream.

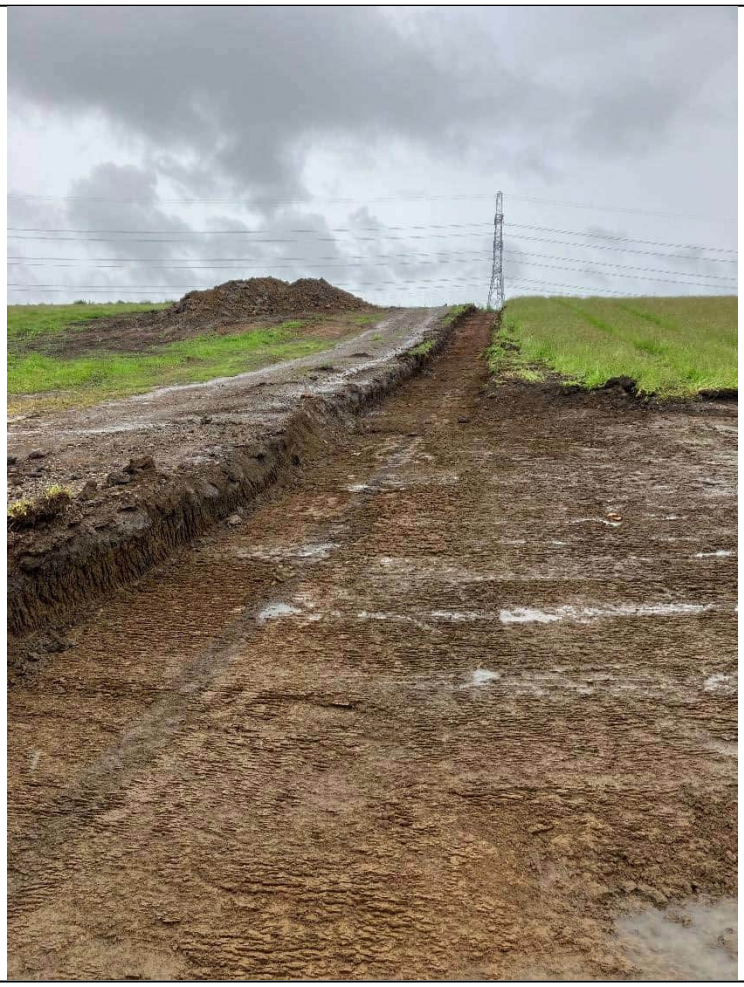


Photo No. 4	Date: 17/11/22

Description:
View of the area stripped facing East towards Fitzgerald Road.

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Site Inspection Record

Project Number	**510611**	Date	**19 January 2023**
Project Name	**Drury Precinct**	From	**Bryn Pattison**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Sunny**		**Dry**

SUBJECT Topsoil Strip Inspection

Representatives from Aurecon attended site on the 19 Jan 2023 to inspect an area of subgrade surface post topsoil strip. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Approximately 1.3 ha of topsoil had been stripped within catchment A10 and loaded to a stockpile, refer to ***Figure 1: Extent of works observed***.
- The underlying subgrade was firm underfoot, and there were no observable soft areas.
- Evidence of heavy haulage vehicle passage was observed across the stripped area as part of the initial compaction and sealing of subgrade.

Recommendations

- Earthwork can proceed in this area.

Figure 1: Extent of works observed

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PHOTOGRAPHS

Client Name:	**Site Location:**	**Project No.**
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	**Date:**
1	19/01/23

Description:

Topsoil strip progress underway.

Photo No.	**Date:**
2	19/01/23

Description:

Topsoil strip complete.

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Site Inspection Record

Project Number	**510611**	Date	**23 January 2023**
Project Name	**Drury Precinct**	From	**Bryn Pattison**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Sunny**	Condition	**Dry**

SUBJECT **Finished Subgrade Level Inspection**

Representatives from Aurecon attended site on 23 Jan 2023 to inspect areas of finished subgrade surface for residential lots. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Approximately 1.79 ha has been trimmed to finished subgrade level on Lots 15,17,18,19 and 20. refer to ***Figure 1: Extent of works observed***.
- The underlying subgrade was firm underfoot, and there were no observable soft areas.
- Minor surface water present in a few locations due to recent overnight rainfall event.

Recommendations

- The finished subgrade for the lots is suitable for topsoil.

Closing Comments

The site features including finished surface areas inspected is presented in the photos appended to this report.

Figure 1: Extent of works observed

PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	17-01-23

Description:

Half of Lot 15 FSL.

Photo No.	Date:
2	17-01-23

Description:

Half of Lot 15 FSL.

Photo No.	Date:
3	19-01-23

Description:

Lot 18 FSL.

Photo No.	Date:
4	19-01-23

Description:

Lot 18 FSL and progression into Lot 19.

Photo No.	Date:
5	23-01-23

Description:

Lot 17 FSL.

Photo No.	Date:
6	23-01-23

Description:

Lot 17 FSL.

Photo No.	Date:
7	23-01-23

Description:

Lot 20 FSL.

Photo No.	Date:
8	23-01-23

Description:

Lot 20 FSL.

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Site Inspection Record

Project Number	**510611**	Date	**24 January 2023**
Project Name	**Drury Precinct**	From	**Bryn Pattison**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Sunny**		**Dry**

SUBJECT Topsoil Strip Inspection

Representatives from Aurecon attended site on the 24 Jan 2023 to inspect an area of subgrade surface post topsoil strip. Representatives from Ross Reid Contractors were present during the inspection.

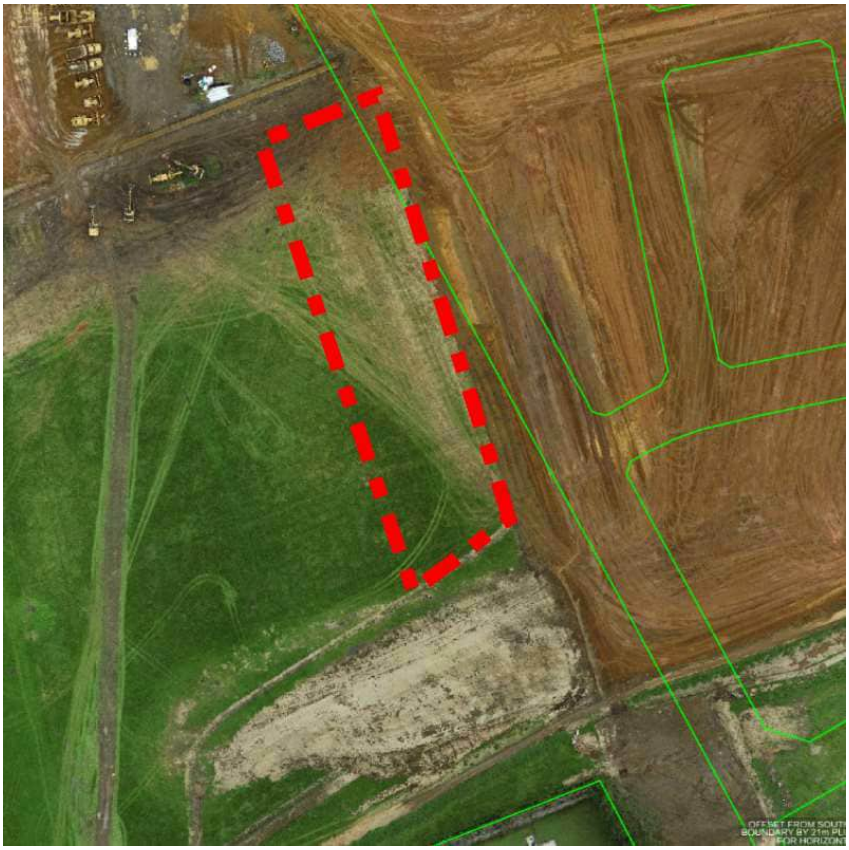
Site Observations

- Approximately 0.5 ha of topsoil had been stripped within catchment A11 and loaded to a stockpile, refer to ***Figure 1: Extent of works observed***.
- The underlying subgrade was firm underfoot, and there were no observable soft areas.
- Evidence of heavy haulage vehicle passage was observed across the stripped area as part of the initial compaction and sealing of subgrade.

Recommendations

- Earthworks can proceed in this area.

Figure 1: Extent of works observed



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PHOTOGRAPHS

Client Name:	**Site Location:**	**Project No.**
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	**Date:**
1	19/01/23

Description:

Area of topsoil striped.

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Site Inspection Record

Project Number	**510611**	Date	**10 February 2023**
Project Name	**Drury Precinct**	From	**Bryn Pattison**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Sunny**	Condition	**Dry**

SUBJECT Finished Subgrade Level Inspection

Representatives from Aurecon attended site to inspect areas of finished subgrade surface.
Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Approximately 1.28 ha has been trimmed to finished subgrade level on Lots 16 and the reserve. refer to ***Figure 1: Extent of works observed***.
- The underlying subgrade was firm underfoot, and there were no observable soft areas.

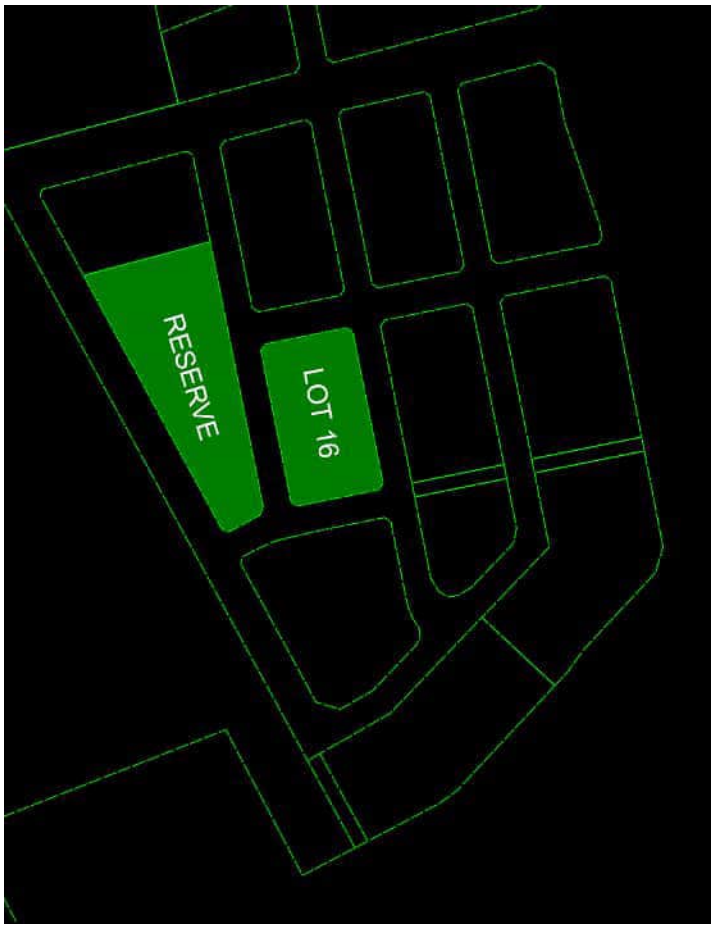
Recommendations

- The finished subgrade is suitable for topsoil spread.

Closing Comments

- The site features including finished surface areas inspected is presented in the photos included in this report.

Figure 1: Extent of works observed (green hatch)



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Photographs

Lot 16

Reserve

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Site Inspection Record

Project Number	**510611**	Date	**12 February 2023**
Project Name	**Drury Precinct**	From	**Bryn Pattison**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**2**
Weather	**Overcast**	Condition	**Damp**

SUBJECT Finished Subgrade Level Inspection

Representatives from Aurecon attended site to inspect areas of finished subgrade surface.
Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Approximately 0.43 ha has been trimmed to finished subgrade level on Lot 12. refer to ***Figure 1: Extent of works observed***.
- The underlying subgrade was firm underfoot, and there were no observable soft areas.

Recommendations

- The finished subgrade is suitable for topsoil spread.

Closing Comments

- The site features including finished surface areas inspected is presented in the photos included in this report.

Figure 1: Extent of works observed (green hatch)

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Photographs

Lot 12

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Site Inspection Record

Project Number	**510611**	Date	**20 February 2023**
Project Name	**Drury Precinct**	From	**Ho Zhin Man**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**8**
Weather	**Sunny**		**Dry**

SUBJECT Subgrade Inspection

Representatives from Aurecon attended site on the 20 February 2023 to inspect an area of finished subgrade surface for residential lots and platform proposed for backfill stockpile. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Approximately 1.13 ha has been trimmed to finish subgrade level on Lot 13, 19 and approximately half of Lot 14 refer to ***Figure 1: Extent of works observed.***
    - Underlying subgrade was firm underfoot, and there were no observable soft spots.
    - Subgrade consisted of clayey material which have been dried up as evident by cracking.
    - Small amounts of surface water present at low points of Lot 13.
    - No soft spots observed.
    - Batter on the side of Fitzgerald Rd to be completed at the time of visit.
- Approximately 0.28 ha has been filled to match road levels on Lot 200, proposed to be used as a platform for backfill stockpiling ***Figure 1: Extent of works observed.***
    - Subgrade was firm underfoot, and there were no observable soft spots.
    - Tyre tracks left behind from compaction of fill.

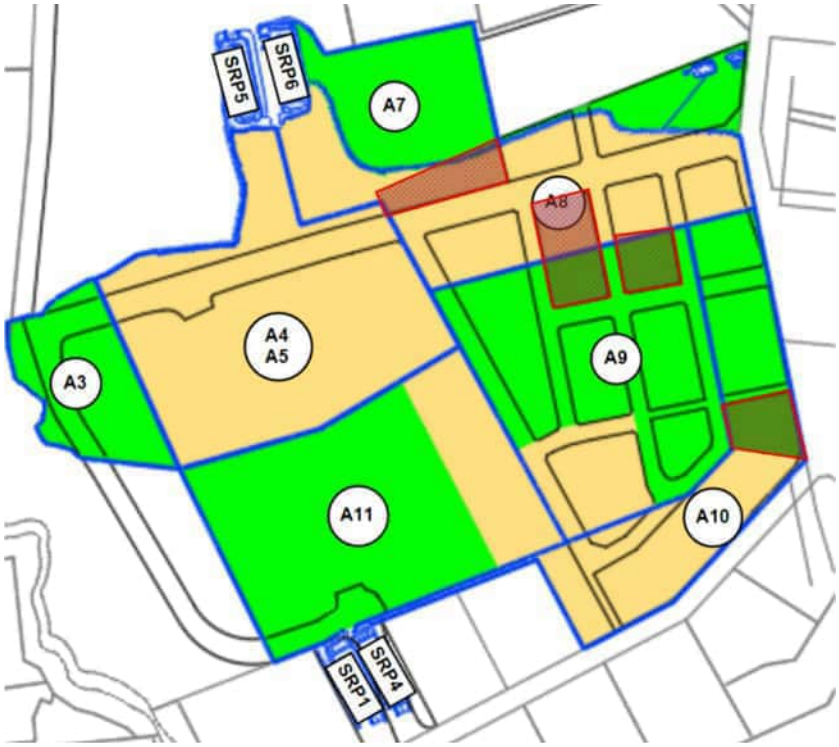
Recommendations

- Lot 13, 14 and proposed stockpile platform finished subgrade is suitable for topsoil spread. Lot 19 finished subgrade is suitable for topsoil spread after batter has been completed.

Closing Comments

- The site features including finished surface areas inspected is presented in the photos included in this report.

Figure 1: Extent of works observed



PHOTOGRAPHS

Client Name:	**Site Location:**	**Project No.**
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	**Date:**
1.1	20/02/23

Description:

Lot 13

Finished subgrade level. Insitu material.

Some surface water.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1.2	20/02/23

Description:

Lot 13

Finished subgrade level. Engineering fill.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1.3	20/02/23

Description:

Lot 13

Finished subgrade level. Insitu material – dried clay

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1.4	20/02/23

Description:

Lot 13

Low point with gathered surface water.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
2.1	20/02/23

Description:

Lot 14

Finished subgrade level

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
2.2	20/02/23

Description:

Lot 14

Finished subgrade level

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
2.3	20/02/23

Description:

Lot 14

Finished subgrade level

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3.1	20/02/23

Description:

Lot 19

Final subgrade level (looking towards north)

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3.2	20/02/23

Description:

Lot 19

Final subgrade level (looking towards south)

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3.3	20/02/23

Description:

Lot 19

Batter still to be completed

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
4.1	20/02/23

Description:

Backfill platform final subgrade level to road level.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
4.2	20/02/23

Description:

Backfill platform final subgrade level.

Tracks from compaction of fill.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
4.3	20/02/23

Description:

Backfill platform final subgrade level.

Tracks from compaction of fill.

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Site Inspection Record

Project Number	**510611**	Date	**21 February 2023**
Project Name	**Drury Precinct**	From	**Ho Zhin Man**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**5**
Weather	**Sunny**		**Dry**

SUBJECT Topsoil Strip Inspection

Representatives from Aurecon attended site on the 21 February 2023 to inspect an area of subgrade surface post topsoil strip. Representatives from Ross Reid Contractors were present during the inspection.

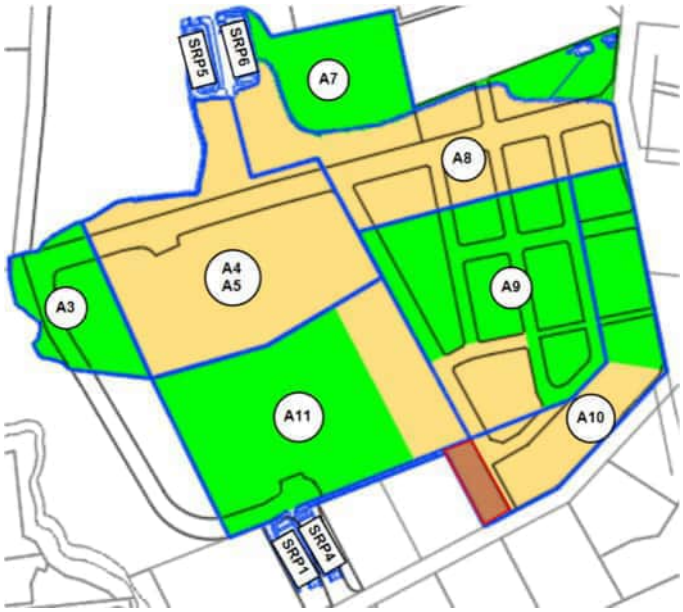
Site Observations

- Approximately 0.3 ha of topsoil had been stripped in area between Lot 7 and Lot 22 (A10) and loaded to a stockpile, refer to ***Figure 1: Extent of works observed***.
    - The underlying subgrade was firm underfoot, with no observable soft spots.
    - Decently sized tree roots were spotted where the treeline previously existed. Tree roots were removed via digger during the inspection, leaving disturbed soil where the roots once were.
    - Contractors in the process of removing rubbish and unsuitable soil as a result of removing pre-existing farmhouse.
    - Bushes located up against treeline on the perimeter of the lot to be removed at a later stage of earthworks to avoid disruption to neighbours.

Recommendations

- Earthworks may proceed in the area after rubbish and unsuitable soil have been removed from site.

Figure 1: Extent of works observed



PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	21/02/23

Description:

Topsoil stripped at site.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
2	21/02/23

Description:

Evidence of roots still beneath ground along removed treeline.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3	21/02/23

Description:

Tree root in the process of being removed.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
4	21/02/23

Description:

Disturbed soil along treeline from digging up roots.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
5	21/02/23

Description:

Tree roots removed.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
6	21/02/23

Description:

Stockpile on the perimeter of site to be used as fill.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
7	21/02/23

Description:

Rubbish and unsuitable pile being removed from site.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
8	21/02/23

Description:

Tree line and bushes on one side of site to be removed at a later stage.

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Site Inspection Record

Project Number	**510611**	Date	**22 February 2023**
Project Name	**Drury Precinct**	From	**Ho Zhin Man**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**4**
Weather	**Sunny**		**Dry**

SUBJECT Subgrade Inspection

Representatives from Aurecon attended site on the 22 February 2023 to inspect an area of finished subgrade surface for residential lots. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Approximately 0.88 ha has been trimmed to finish subgrade level on half of Lot 19 and half of Lot 22 refer to ***Figure 1: Extent of works observed.***
    - Underlying subgrade was firm underfoot, and there were no observable soft spots.
    - Subgrade consisted of clayey material which have been dried up as evident by cracking.
    - Some medium sized boulder observed in the ground, have been marked to be removed in Lot 22.

Recommendations

- Inspected portion of Lot 19 and 22 finished subgrade is suitable for topsoil spread after removal of boulder.

Closing Comments

- The site features including finished surface areas inspected is presented in the photos included in this report.

Figure 1: Extent of works observed

PHOTOGRAPHS

Client Name:	**Site Location:**	**Project No.**
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	**Date:**
1	22/02/23

Description:

Final Subgrade level from top of Lot 19.

Client Name:	**Site Location:**	**Project No.**
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	**Date:**
2	22/02/23

Description:

Final Subgrade level from bottom of Lot 22.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3	22/02/23

Description:

Boulder in Lot 22 marked for removal.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
4	22/02/23

Description:

Soil present in subgrade.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
5	22/02/23

Description:

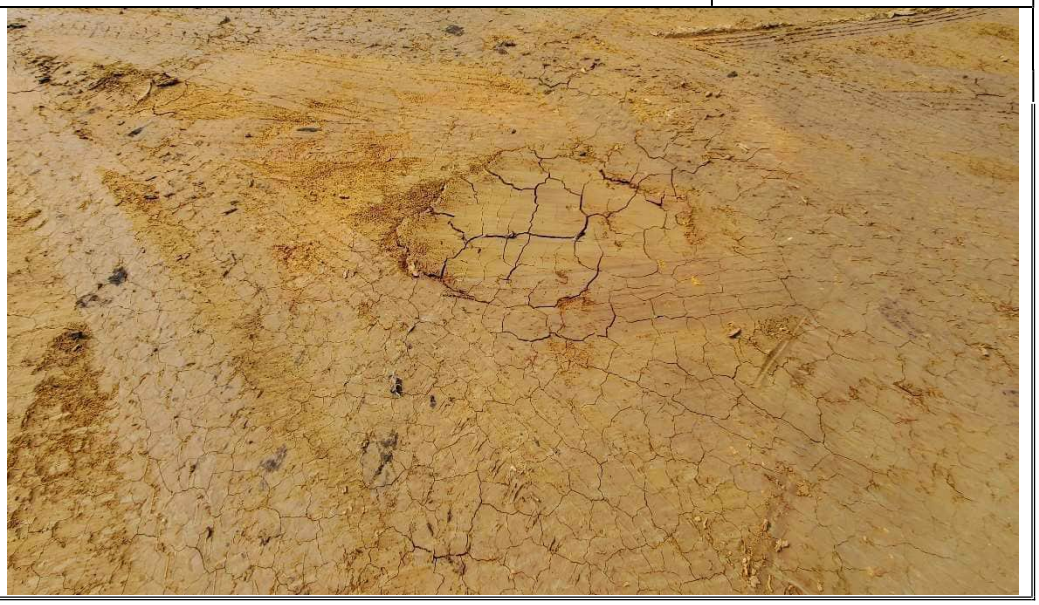
Soil present in subgrade.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
6	22/02/23

Description:

Cracking of subgrade, evidence of clayey soil.



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Site Inspection Record

Project Number	**510611**	Date	**24 February 2023**
Project Name	**Drury Precinct**	From	**Ho Zhin Man**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**7**
Weather	**Drizzling**		**Wet**

SUBJECT Subgrade Inspection

Representatives from Aurecon attended site on the 24 February 2023 to inspect an area of finished subgrade surface for residential lots. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Approximately 0.73 ha has been trimmed to finish subgrade level on Lot 20 and 21 refer to ***Figure 1: Extent of works observed.***
    - Underlying subgrade was firm underfoot, and there were no observable soft spots.
    - Subgrade consists of clayey material and due to the drizzling, subgrade material exhibited increased plasticity on the surface, as expected.
    - Settlement plate is present on Lot 21.
    - Contour drain filled in on Lot 21.

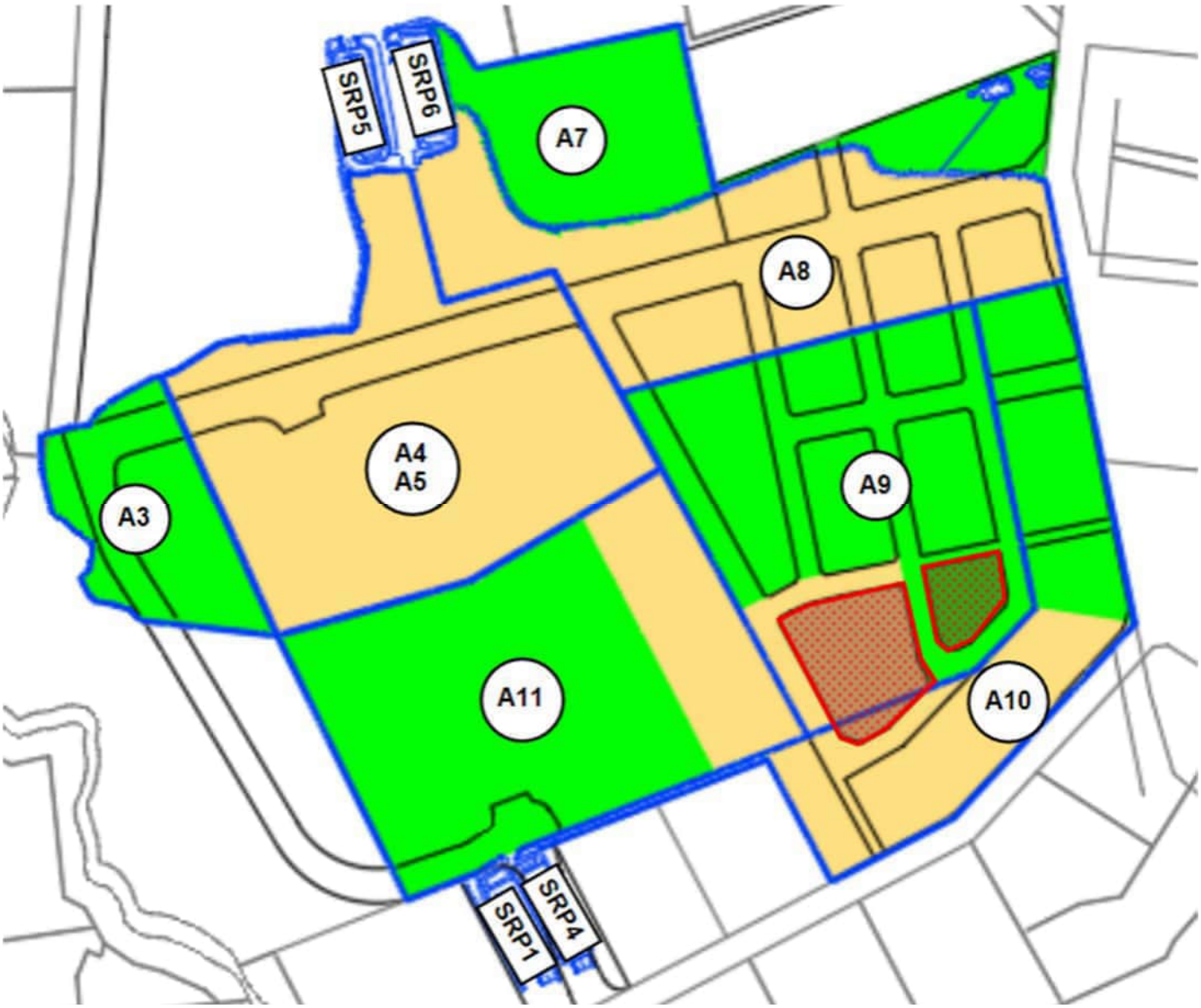
Recommendations

- Lot 20 and 21 finished subgrade is suitable for topsoil spread after removal of boulder.
- Keep settlement plate on Lot 21 installed and topsoil around settlement plate upstand.

Closing Comments

- The site features including finished surface areas inspected is presented in the photos included in this report.

Figure 1: Extent of works observed



PHOTOGRAPHS

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
1	24/02/23

Description:

Lot 21
Final Subgrade level.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
2	24/02/23

Description:

Lot 21
Contour drain backfilled.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
3	24/02/23

Description:

Lot 21
Settlement Plate.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
4	24/02/23

Description:

Lot 21
Subgrade soil.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
5	24/02/23

Description:

Lot 21
Final subgrade level.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
6	24/02/23

Description:

Lot 20
Final subgrade level.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
6	24/02/23

Description:

Lot 20
Final subgrade level.

Client Name:	Site Location:	Project No.
Kiwi Property Group	133 Fitzgerald Road, Drury	510611

Photo No.	Date:
6	24/02/23

Description:

Lot 20
Subgrade soil.

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Site Inspection Record

Project Number	**510611**	Date	**05 March 2023** **15 March 2023**
Project Name	**Drury Precinct**	From	**Bryn Pattison**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**8**
Weather	**Sunny with light wind**	Conditions	**Dry**

SUBJECT Bulk Earth Works Subgrade Inspection

Representatives from Aurecon attended site to inspect areas of finished subgrade. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

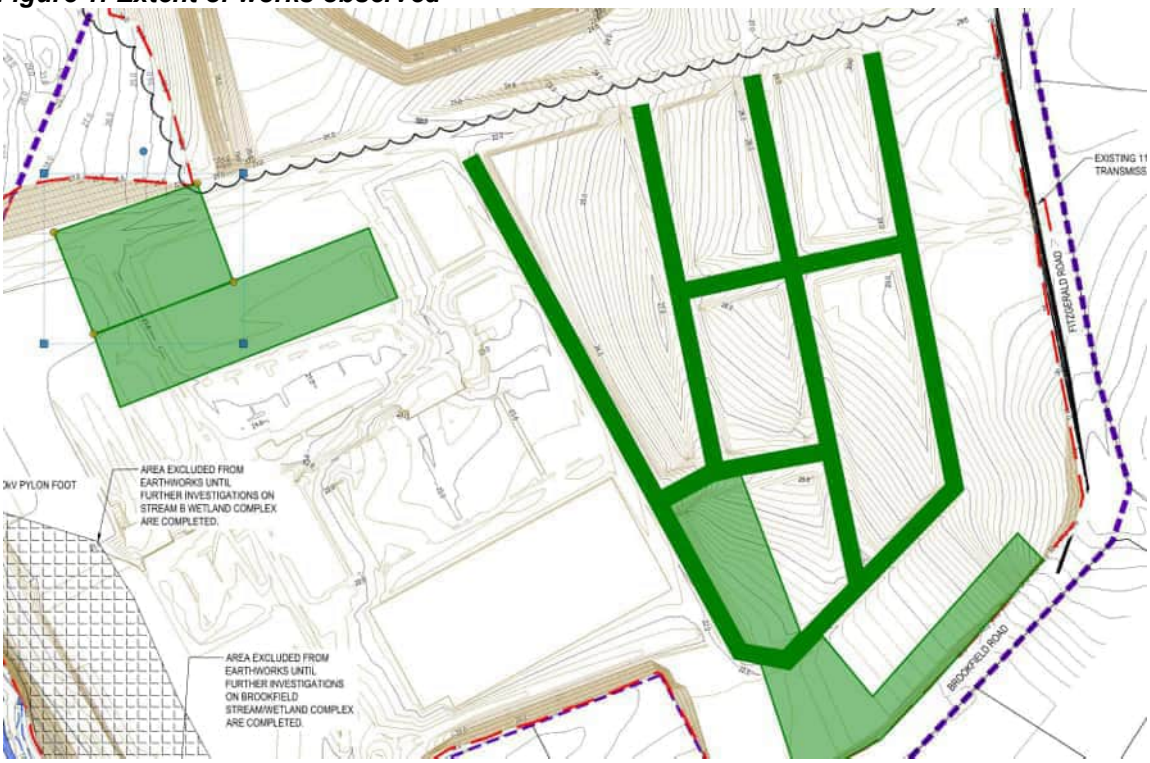
Residential Lot Area	10.5 ha
Retail Lot Area	13.0 ha
Roads and Berms Area	8.9 ha

Firm underfoot	Yes
Uniformly graded	Yes
Free draining	Yes
Free of rutting and weaving	Yes
Free of organic material	Yes
Free of soft spots	Yes

Closing Comments

- Areas inspected to be covered as soon as possible to protect subgrade from drying out and cracking
- Visual inspection only, as-built levels for areas on grade to be approved separately

Figure 1: Extent of works observed



aurecon

PHOTOGRAPHS

Client Name:	**Site Location:**	**Project No.**
Kiwi Property Group	133 Fitzgerald Road, Drury	510611
Photo No.1		**Date: 05 March 2023**

Photo No.2		Date: 05 March 2023

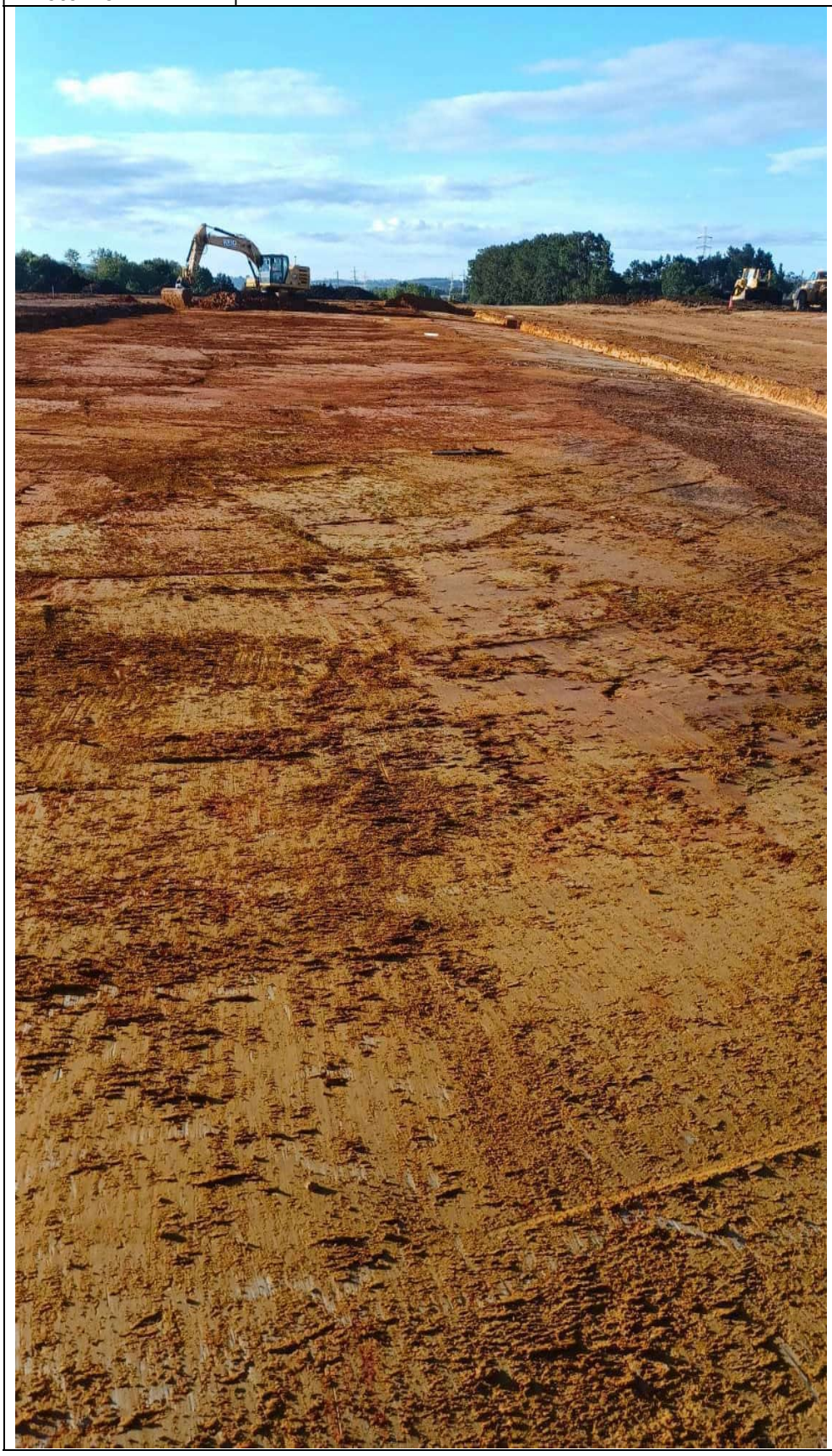


Photo No.3		Date: 05 March 2023

Photo No.4		Date: 05 March 2023

Photo No.5		Date: 05 March 2023

Photo No.6		Date: 05 March 2023

Photo No.7		Date: 05 March 2023

Photo No.8		Date: 05 March 2023

Photo No.9		Date: 05 March 2023

Photo No.10		Date: 15 March 2023

Photo No.11		Date: 15 March 2023

Photo No.12		Date: 15 March 2023

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Site Inspection Record

Project Number	**510611**	Date	**15 March 2023**
Project Name	**Drury Precinct**	From	**Bryn Pattison**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**3**
Weather	**Sunny with light wind**	Conditions	**Dry**

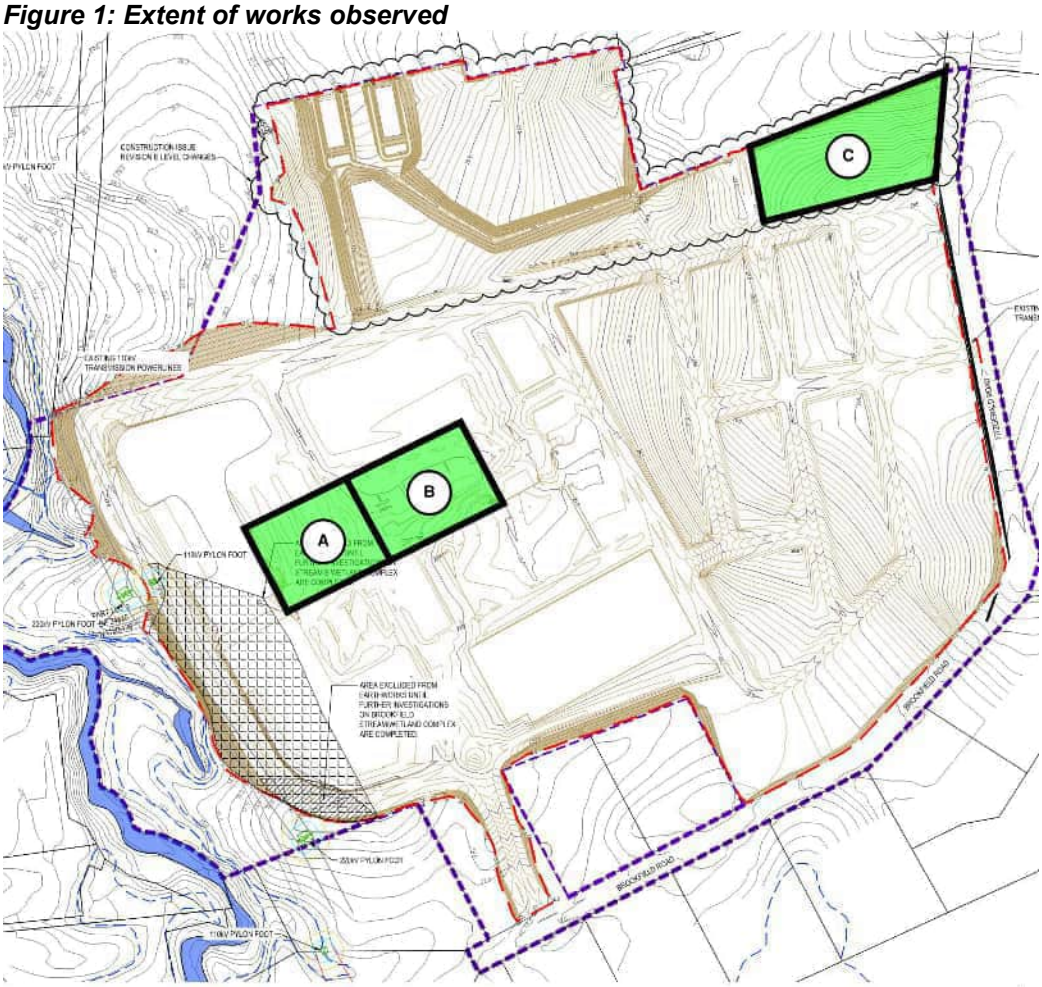
SUBJECT **Bulk Earth Works Topsoil Strip Inspection**

Representatives from Aurecon attended site to inspect areas of finished subgrade. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Area A – Underlying subgrade was firm underfoot, uniformly graded, and free of organics. This area is to be filled.
- Area B – A thin layer of fill had already been placed over the subgrade where topsoil had been trimmed, however from visual inspection it appeared to be homogenous with Area A. This area is to be filled.
- Area C – Underlying subgrade was firm underfoot, uniformly graded, and free of organics. This area is to be cut.

Figure 1: Extent of works observed



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PHOTOGRAPHS

Client Name:	**Site Location:**	**Project No.**
Kiwi Property Group	133 Fitzgerald Road, Drury	510611
Photo No.1	**Area A**	**Date: 15 March 2023**

Photo No.2	**Area B**	**Date: 15 March 2023**

Photo No.3	Area C	Date: 15 March 2023

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Site Inspection Record

Project Number	**510611**	Date	**18 April 2023**
Project Name	**Drury Precinct**	From	**Shona du Preez**
Contractor	**Ross Reid Contractors Limited**	Total Pages	**3**
Weather	**Sunny with light wind**	Conditions	**Fine**

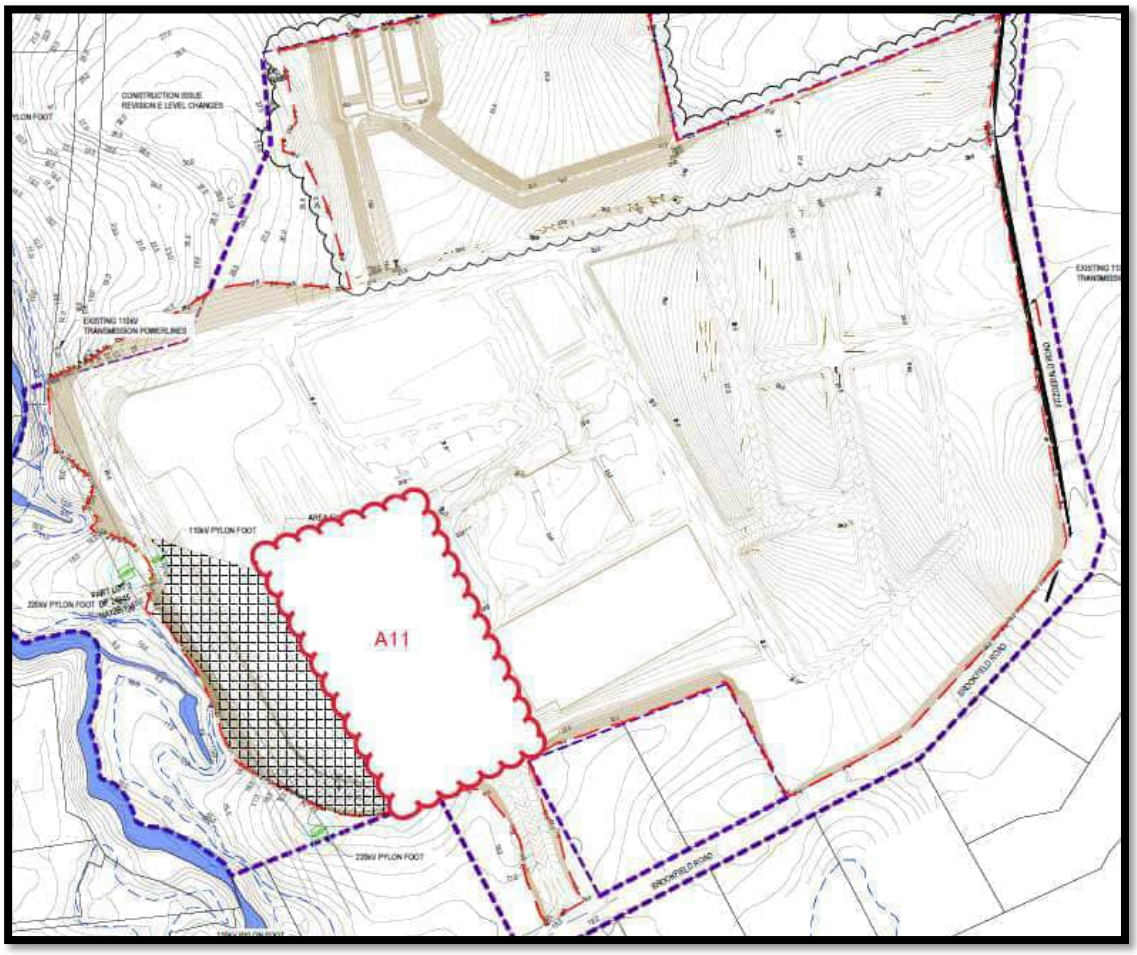
SUBJECT **Bulk Earth Works Topsoil Strip Inspection**

Representatives from Aurecon attended site to inspect areas of finished topsoil stripping. Representatives from Ross Reid Contractors were present during the inspection.

Site Observations

- Area A11 – Underlying subgrade was firm underfoot, uniformly graded, and free of organics. This area is to be filled.

Figure 1: Extent of works observed



PHOTOGRAPHS		
Client Name: Kiwi Property Group	**Site Location:** 133 Fitzgerald Road, Drury	**Project No.** 510611
Photo No.1	**Area A11**	**Date: 18 April 2023**

PHOTOGRAPHS		
Client Name: Kiwi Property Group	**Site Location:** 133 Fitzgerald Road, Drury	**Project No.** 510611
Photo No.2	**Area A11**	**Date: 18 April 2023**

APPENDIX G: LABORATORY TEST DATA

Construction Sciences

Construction Sciences NZ Limited
ABN: 93 485 645

Address:
Unit 3, 9 Mohuia Crescent Elsdon
Porirua NZ 5022

Laboratory: **Wellington Laboratory**
Phone: 64 27 364 3488
Fax:
Email: wellington@constructionsciences.net

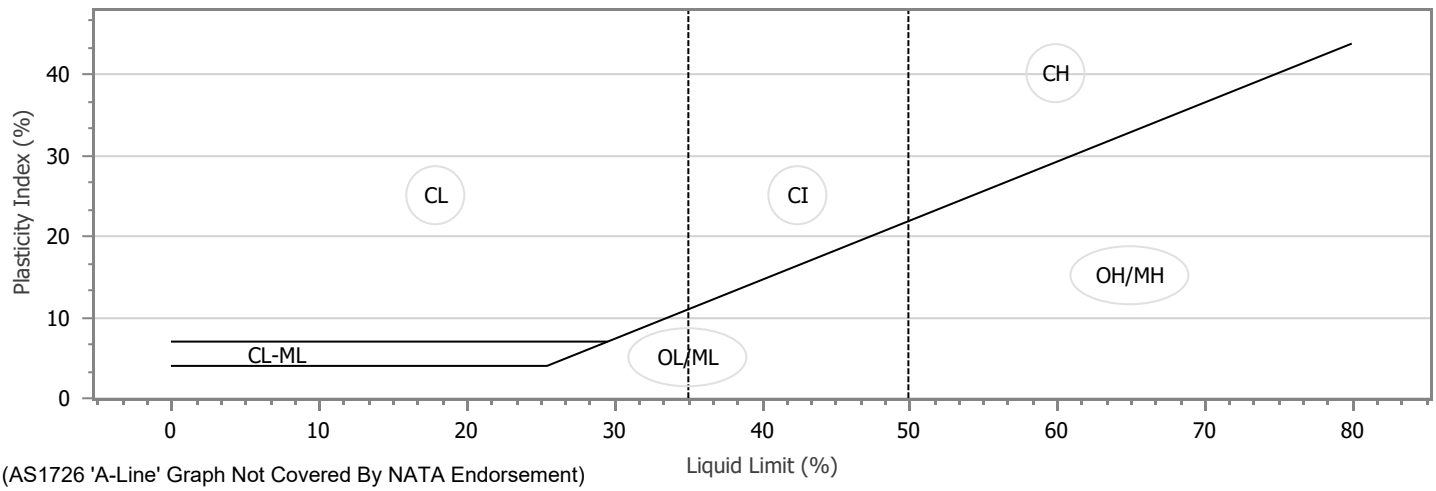
ATTERBERG LIMITS REPORT

Client:	CMW Geotechnical NZ Ltd	Report Number:	1232/R/28590-1
Client Address:	116 Cameron Road, Tauranga	Project Number:	1232/P/118
Project:	Materials Testing - Hamilton	Lot Number:	LOT10
Location:	Upper North Island	Internal Test Request:	1232/T/18108
Supplied To:	CMW Geotechnical NZ Limited	Client Reference/s:	
Area Description:		Report Date / Page:	10/05/2024 Page 1 of 1

Test Procedures:	NZS4402.2.2, NZS4402.2.4, NZS4402.2.3, NZS4402.2.6, NZS4402.2.1		
Sample Number	1232/S/114781	Sample Location	
Sampling Method	Tested As Received	Location	Drury Centre
Date Sampled	6/05/2024		
Sampled By	Karl Rutherford		
Date Tested	10/05/2024		
Drying / Prep Method	Air Dried / Wet Sieved (whole sample)	Material Source	-
LL Water Type		Material Type	Insitu
LL Device Type	Cassagrande	Specification	No Specification
Client Reference	-	Prep Mat > 53mm (%)	-
Material Description	-		

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit		**97**	
Plastic Limit		**41**	
Plasticity Index		**56**	
Linear Shrinkage		**21**	
Linear Shrinkage Observations:	-		

Atterberg Limits 'A-Line' Graph



(AS1726 'A-Line' Graph Not Covered By NATA Endorsement)

Remarks

ACCREDITED
IANZ
TESTING LABORATORY

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Accreditation Number: 1232

Approved Signatory: Karl Rutherford
Form ID: W11Rep Rev 2

Construction Sciences

Construction Sciences NZ Limited
ABN: 93 485 645

Address:
Unit 3, 9 Mohuia Crescent Elsdon
Porirua NZ 5022

Laboratory: **Wellington Laboratory**
Phone: 64 27 364 3488
Fax:
Email: wellington@constructionsciences.net

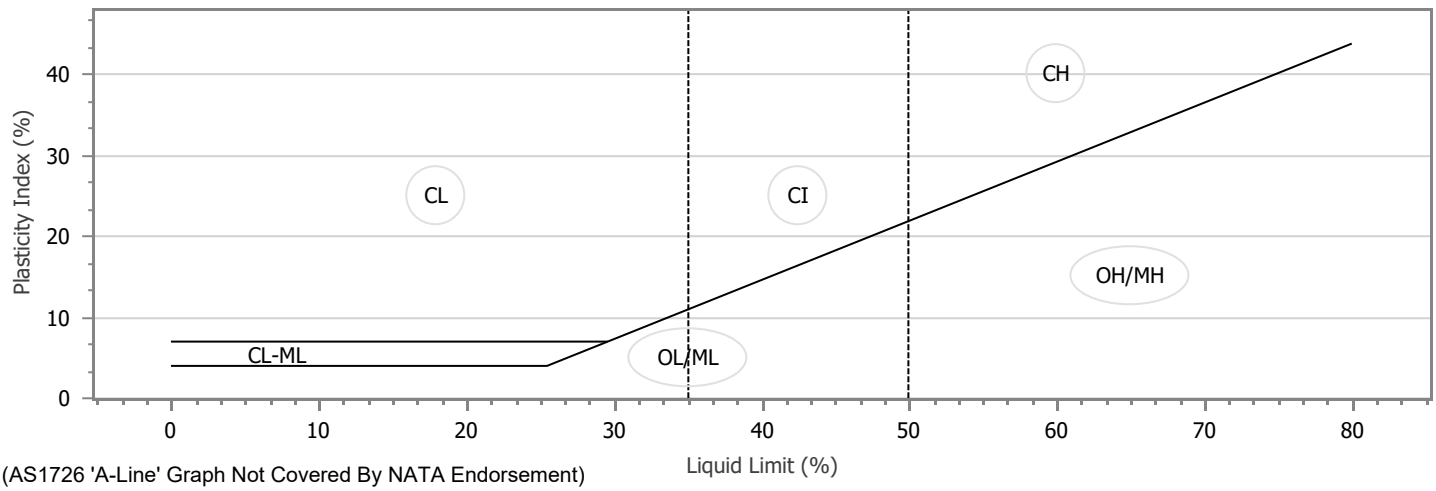
ATTERBERG LIMITS REPORT

Client:	CMW Geotechnical NZ Ltd	Report Number:	1232/R/28591-1
Client Address:	116 Cameron Road, Tauranga	Project Number:	1232/P/118
Project:	Materials Testing - Hamilton	Lot Number:	LOT11
Location:	Upper North Island	Internal Test Request:	1232/T/18108
Supplied To:	CMW Geotechnical NZ Limited	Client Reference/s:	
Area Description:		Report Date / Page:	13/05/2024 Page 1 of 2

Test Procedures:	NZS4402.2.2, NZS4402.2.4, NZS4402.2.3, NZS4402.2.6, NZS4402.2.1		
Sample Number	1232/S/114782	Sample Location	
Sampling Method	Tested As Received	Location	Drury Centre
Date Sampled	6/05/2024		
Sampled By	Karl Rutherford		
Date Tested	13/05/2024		
Drying / Prep Method	Oven Dried / Wet Sieved (whole sample)	Material Source	-
LL Water Type		Material Type	Insitu
LL Device Type	Cassagrande	Specification	No Specification
Client Reference	-	Prep Mat > 53mm (%)	-
Material Description	-		

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit		**89**	
Plastic Limit		**41**	
Plasticity Index		**48**	
Linear Shrinkage		**17**	
Linear Shrinkage Observations:	-		

Atterberg Limits 'A-Line' Graph



(AS1726 'A-Line' Graph Not Covered By NATA Endorsement)

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Porirua NZ 5022

Laboratory: **Wellington Laboratory**
Phone: 64 27 364 3488
Fax:
Email: wellington@constructionsciences.net

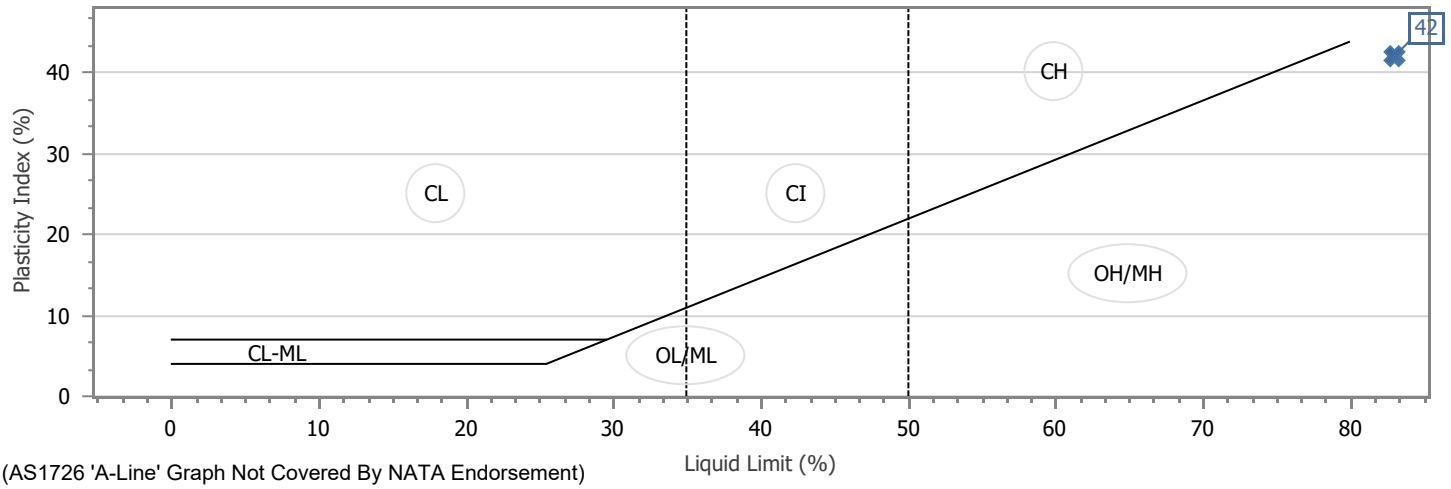
ATTERBERG LIMITS REPORT

Client:	CMW Geotechnical NZ Ltd	Report Number:	1232/R/28591-1
Client Address:	116 Cameron Road, Tauranga	Project Number:	1232/P/118
Project:	Materials Testing - Hamilton	Lot Number:	LOT20
Location:	Upper North Island	Internal Test Request:	1232/T/18108
Supplied To:	CMW Geotechnical NZ Limited	Client Reference/s:	
Area Description:		Report Date / Page:	13/05/2024 Page 2 of 2

Test Procedures:	NZS4402.2.2, NZS4402.2.4, NZS4402.2.3, NZS4402.2.6, NZS4402.2.1		
Sample Number	1232/S/114783	Sample Location	
Sampling Method	Tested As Received	Location	Drury Centre
Date Sampled	6/05/2024		
Sampled By	Karl Rutherford		
Date Tested	13/05/2024		
Drying / Prep Method	Oven Dried / Wet Sieved (whole sample)	Material Source	-
LL Water Type		Material Type	Insitu
LL Device Type	Cassagrande	Specification	No Specification
Client Reference	-	Prep Mat > 53mm (%)	-
Material Description	-		

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit		**83**	
Plastic Limit		**41**	
Plasticity Index		**42**	
Linear Shrinkage		**22**	
Linear Shrinkage Observations:	-		

Atterberg Limits 'A-Line' Graph



(AS1726 'A-Line' Graph Not Covered By NATA Endorsement)

Remarks

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Accreditation Number: 1232

Approved Signatory: Karl Rutherford
Form ID: W11Rep Rev 2

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Laboratory: **Wellington Laboratory**
Phone: 64 27 364 3488
Fax:
Email: wellington@constructionsciences.net

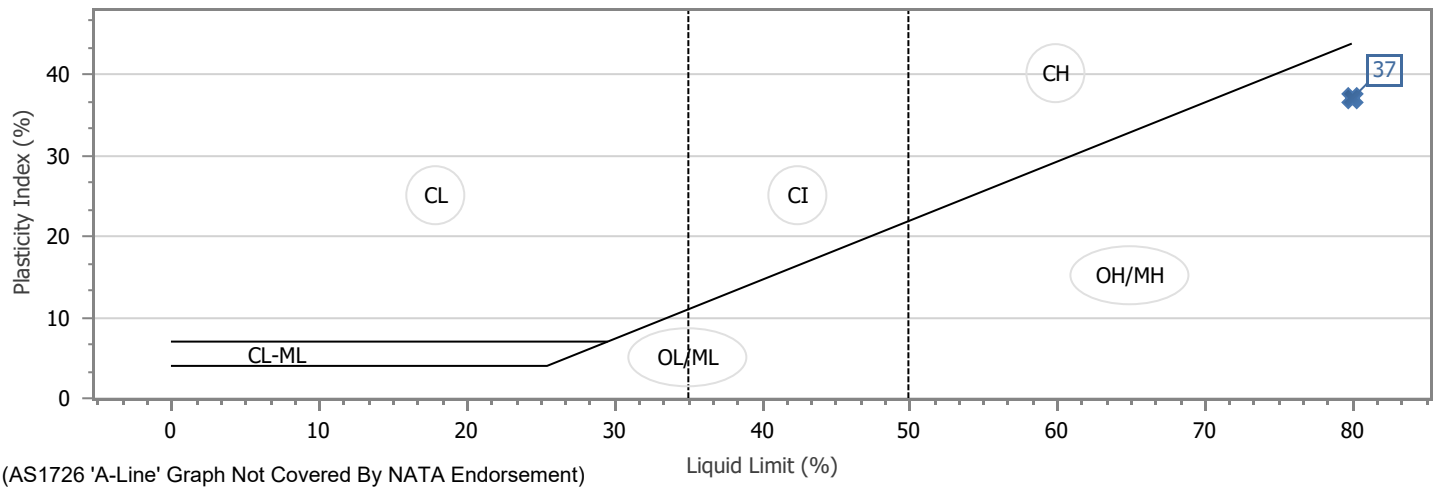
ATTERBERG LIMITS REPORT

Client:	CMW Geotechnical NZ Ltd	Report Number:	1232/R/28598-1
Client Address:	116 Cameron Road, Tauranga	Project Number:	1232/P/118
Project:	Materials Testing - Hamilton	Lot Number:	LOT13
Location:	Upper North Island	Internal Test Request:	1232/T/18108
Supplied To:	CMW Geotechnical NZ Limited	Client Reference/s:	
Area Description:		Report Date / Page:	13/05/2024 Page 1 of 1

Test Procedures:	NZS4402.2.2, NZS4402.2.4, NZS4402.2.3, NZS4402.2.6, NZS4402.2.1		
Sample Number	1232/S/114784	Sample Location	
Sampling Method	Tested As Received	Location	Drury Centre
Date Sampled	6/05/2024		
Sampled By	Karl Rutherford		
Date Tested	13/05/2024		
Drying / Prep Method	Oven Dried / Wet Sieved (whole sample)	Material Source	-
LL Water Type		Material Type	Insitu
LL Device Type	Cassagrande	Specification	No Specification
Client Reference	-	Prep Mat > 53mm (%)	-
Material Description	-		

Atterberg Limit	Specification Minimum	Test Result	Specification Maximum
Liquid Limit		**80**	
Plastic Limit		**43**	
Plasticity Index		**37**	
Linear Shrinkage		**22**	
Linear Shrinkage Observations:	-		

Atterberg Limits 'A-Line' Graph



(AS1726 'A-Line' Graph Not Covered By NATA Endorsement)

Remarks

ACCREDITED
IANZ
TESTING LABORATORY

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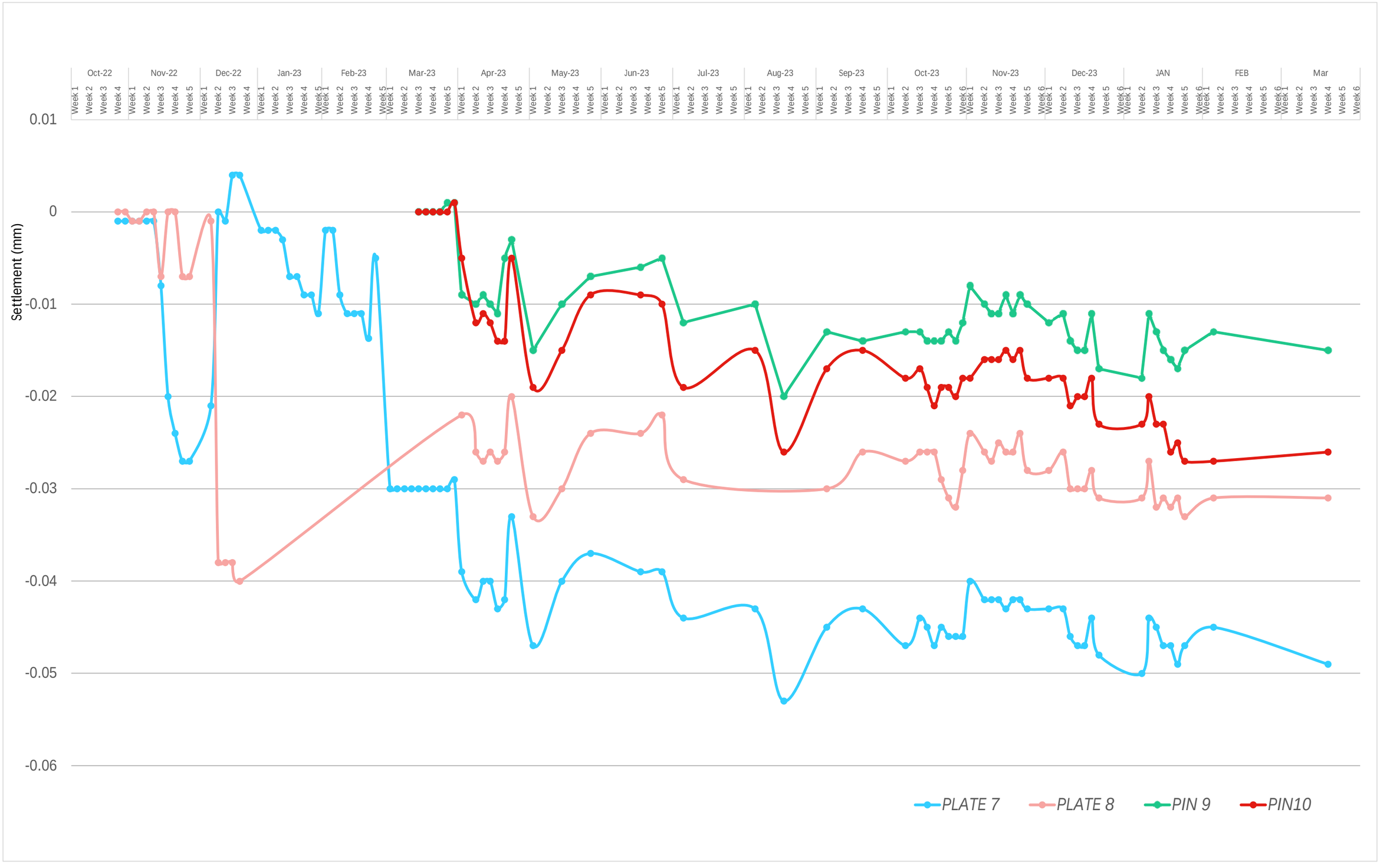
Accreditation Number: 1232

Approved Signatory: Karl Rutherford
Form ID: W11Rep Rev 2

APPENDIX H: GEOTECHNICAL MONITORING REPORT


Oct-22
Nov-22
Dec-22
Jan-23
Feb-23
Mar-23
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
JAN
FEB
Mar
Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
0.01
0
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
Settlement (mm)
PLATE 7
PLATE 8
PIN 9
PIN10

APPENDIX D: AURECON EARTHWORKS QA AND CERTIFICATION

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2023-09-22

David Schwartfeger
Project Manager
Kiwi Property Group
PO Box 2071
Auckland 1140

Dear David

Re: Drury Centre Project – Earthworks QA and Certification up to May 2023 – Geotechnical Review, Our Ref 501611

1 Introduction

Aurecon New Zealand Ltd (Aurecon) was engaged by Kiwi Property Holdings No.2 Limited to provide earthworks compaction control and geotechnical earthworks certification for a residential and commercial development located at 133 Fitzgerald Road, Drury (herein referred to as the 'Project').

The works done at the Project through to May 2023 has included large scale earthworks over the southern part of the site, which have been undertaken during the later part of the 2021 to 2022 earthworks season and the 2022 to 2023 earthworks season. Earthworks are still ongoing; however, the Client has engaged other consultants and Aurecon will not be involved in the project going forward. Therefore, this letter has been prepared to provide an overview of the earthworks undertaken up to May 2023.

The earthworks design undertaken by Aurecon is presented in the approved resource consent drawings (Resource Consent BUN60390224) in Appendix A. The extent of earthworks covered by this letter, up to May 2023, is shown on the Ross Reid Contractors Ltd Cut Fill As-Built Surface Drawing in Appendix B.

The purpose of this letter is to detail the earthworks undertaken at the site and present the earth fill compaction results and confirm the suitability of the engineered fill including certification of the filling works conducted in the 2021/2022 and 2022/2023 earthworks seasons.

It is understood that this document will be superseded by a Geotechnical Completion Report (GCR) that will be prepared by others that meets the requirements of the Auckland Council Code of Practice for Land Development and Subdivision, NZS4431:1989[1], the consent conditions outlined in consent BUN60390224 and the stamped consented drawings, upon completion of the project.

2 Geotechnical Reports

In preparation of this letter, we have reviewed the following, previously issued documents, pertaining to the Earthworks aspects of the project:

- Aurecon Geotechnical Investigation Report (GIR*) Drury Centre Geotechnical Investigation Report*, Ref: 510611, Rev 5. Dated, 4 October 2022.

[1] *At the time of resource consenting the earthworks were designed in accordance with NZS4431:1989, which has since been superseded by NZS4431:2022.*

- Aurecon Report, *Section 7: Drury Centre Bulk Earthworks: Earthworks Specifications*, Ref: 510611, Revision 1, Dated 3 December 2021.
- Aurecon Letter *Drury Bulk Earthworks Stage 1 Separable Portion 1: Completion Certificate 2023– Geotechnical Review,* dated 15 May 2023.

A copy of the Practical completion letter and Earthworks Specifications are presented in Appendix C, for ease of reference.

3 Earthworks Operations

Erosion and sediment control works, and some minor filling commenced on the 11 April 2022 with the main bulk earthworks operations undertaken between May 2022 and 15 May 2023, by Ross Reid Contractors Ltd.

The proposed earthworks are presented on the approved set of resource consent Earthworks Drawings in Appendix A. The cut and fill Layout Plan shows that cuts of up to 9m and fills of up to 8m are required to achieve the necessary design levels of the proposed future lots. This has only been achieved in part at the time of writing this letter.

The extent of Earthworks undertaken to date, and that covered by this letter are shown on the Ross Reid Contractors Ltd, Cut Fill As-Built Surface, located in Appendix B.

3.1 Quantities

The quantities of cuts and fill placed during the 2022/2023 earthworks period, as part of the Stage 1 Earthworks, covered in this letter are presented in Table 1.

Table 1: Summary of the Stage 1 cut to fill quantities.

Item*	Quantity (m^3)**
Imported Fill (Certifiable)	165.2
Cut to Certified Fill (Excluding Top Loading)	243,573.36
Cut to certified Fill (Top Loading)	20,570.51
Stockpiled Organic Material for respreading or removal.	8,887.54
Unsuitable Material Removed from Site	6,425.76

**Excluding topsoil volumes*

***Quantities as per Ross Reid Progress Payment Schedule #12 – May 2023.*

The surface level achieved by the filling works outlined above is presented on the Ross Reid Contractors Ltd Cut Fill Surface Drawing Located in Appendix B.

4 Quality Assurance and Controls

4.1 Laboratory Testing

Laboratory testing was conducted on the site won and imported fill materials prior to their use. Testing was conducted by IANZ accredited facilities, and the results evaluated by an Aurecon Engineering Geologist, who provided confirmation of their suitability for use as bulk fill.

The requirements for laboratory testing and minimum testing frequencies, as defined in the Earthworks Specification, and are presented in Table 2.

Table 2: Source suitability testing

Test Type/Requirement	Test Method	Test Frequency
Standard Compaction with Air Voids	NZS 4402:1986, Test 4.1.1	3 tests per site-won fill material for each source location.
Water Content (In-situ)	NZS 4402:1986, Test 2.1	3 tests per site-won fill material for each source location.
Shear Strength	NZGS Guideline for Hand Held Shear Vane Test 2001	3 tests per site-won fill material for each source location, undertaken on a compacted mould sample, which shall be measured and reported for every point on each compaction curve.
Particle Size Distribution	NZS 4402:1986, Test 2.8.1	3 tests per site-won fill material for each source location.
Plasticity Index	NZS 4402:1986, Test 2.2, 2.3 & 2.4	3 tests per site-won fill material for each source location.

The results of the Laboratory testing received from the Contractor is presented in Appendix D.

4.2 Site Monitoring Inspections

During the earthworks season site monitoring inspections were undertaken on a regular basis by an Aurecon Engineer, to assess general compliance with NZS4431:1989 and the Earthworks Specification and monitoring schedule. The inspections included stripping of topsoil, removal of non-certified fill and the benching of the ground prior to the placement of fill.

During earthworks we observed the cut to fill material being placed and assessed its suitability for use as engineered fill prior, including proof rolling of subgrade for soft spots prior to fill placement, observing the fill being compacted and insitu testing of the fill.

Site Inspection Reports (SIR) are presented in Appendix E.

4.3 Quality Control Criteria

The quality control criteria were set out in Earthworks Specification, a summary of which is presented in Table 3. A copy of the full Earthworks Specification is included in Appendix C.

Table 3: Summary of testing requirements

Material	Criteria	Method
Earth fill	Top 1m 98% of Maximum Dry Density (MDD) Greater than 1m Depth 95% of Maximum Dry Density (MDD) All Moisture content +/- 2% of Optimum Moisture Content (OMC). <or=10% average air voids over 10 tests with a maximum of 12% for any individual test. Air voids to be	**Preferred** Beneath Roads Nuclear Density Meter (NDM) test at a rate of 1 test per 20m in each traffic lane All other earthworks areas Nuclear Density Meter (NDM) test at a rate of 1 test per 500m^3, or, a minimum of 1 test per 0.5m thickness of fill is being placed. Whichever is greater.

Material	Criteria	Method
	calculated based on laboratory solid density test. Vane shear strength. Minimum average of 150kPa for 10 tests. Minimum of 110kPa for any one test.	Each NDM test shall comprise 2 measurements using the same probe hole but orientated at 90 degrees to each other. Shear vane test at a rate of 2 tests per 500m^3, or, a minimum of 1 test per 0.5m thickness of fill is being placed. Whichever is greater. Undrained shear strength of the compacted soil at any test location shall be taken as the mean of a set of tests, comprising 3 tests undertaken within an area of 0.5m^2 of each other. **Alternative** New Zealand standard compaction test (NZS4402, Test 4.1.1).
Subgrade	CBR	Dynamic Cone Penetrometer test (NZS 4402, Test 6.5.2)
Subgrade	On-site inspection with Engineer	Proof roll on site - Two axle truck with twin tyres on rear axle, loaded to eight tonnes on the rear axle
Sub-base	Mean > 98% of Max. Dry Density (MDD) Min > 95% of MDD	**Preferred** Roads Nuclear Density Meter test at a rate of 1 test per 20m in each traffic lane Building platforms or other hardstand areas Nuclear Density Meter test at a rate of 1 test per 10m^2 **Alternative** MDD to be the greater of: New Zealand vibrating hammer compaction test (NZS4402, Test 4.1.3). Plateau Density Test on a test strip of approx. 50m and at an appropriate water content
Sub-base	CBR > 40%	Dynamic Cone Penetrometer test (NZS 4402, Test 6.5.2)
Base course	Mean > 98% of MDD Min > 95% of MDD	**Preferred** Roads Nuclear Density Meter test at a rate of 1 test per 20m in each traffic lane Building platforms or other hardstand areas Nuclear Density Meter test at a rate of 1 test per 100m^2 **Alternative** MDD to be the greater of: New Zealand vibrating hammer compaction test (NZS4402, Test 4.1.3). Plateau Density Test on a test strip of approx. 50m and at an appropriate water content

Material	Criteria	Method
Base course	95% of the deflections measured shall not exceed: • 0.8mm for Principal and Collector Streets • 1.0mm local streets • 1.3mm for short local streets and cul-de-sacs With no measurement exceeding 25% of the above for the particular category.	Benkelman Beam test

It is noted that as only bulk earthworks have been undertaken to date and the testing requirements which are relevant from the table are the first row – Earth Fill.

4.4 Quality Assurance Testing

In-situ density monitoring was carried out on the general fill areas, to check air voids, water content and undrained shear strengths (Su). Testing was conducted by an independent IANZ endorsed laboratory, engaged by the Contractor. Results of the Nuclear Densometer (NDM) and shear vane testing were submitted to Aurecon for review. Areas that did not meet the standard for engineered fill, set out in Table 2, were reworked and retested until they met the requirements.

The testing was evaluated holistically, with more importance that air voids, shear vane and NDM results pass, noting that moisture content is used by the Contractor to evaluate and optimise to reach the compaction requirements (moisture content provided as guideline).

Testing was conducted at or greater frequency than that recommended by NZS4431:1989, and the Earthworks Specification. The testing results are presented in Appendix E. It is understood that final as-builts will be provided at the completion of the earthworks in accordance with the Earthworks Specification.

4.4.1 Hand Augers

A series of top-down testing was conducted on the lots that had received Practical Completion as *Drury Bulk Earthworks Stage 1 Separable Portion 1: Completion Certificate 2023– Geotechnical Review* to evaluate the bearing capacity of each lot. The testing comprised the drilling of a series of hand augers at discrete locations across the lots. Due to works ceasing on the project the bearing capacity was not evaluated as part of this letter, it is understood that lot specific testing and evaluation will be conducted as part of the Geotechnical Completion Report, upon completion of the project.

The hand augers are presented as part of the QA Testing in Appendix E.

4.5 Settlement Monitoring Summary

As part of the site work, the Contractor installed and monitored settlement plates and pins. The locations of these are shown in Appendix F. Aurecon supervised and reviewed the settlement monitoring data received from the Contractor for the period covering 26 October 2022 to 28 June 2023. The processed data has been presented in Appendix F. We note the following about the settlement data to date.

- Observed settlement is generally similar to the calculated settlements.
- The settlement data over the past three months indicates a general plateauing of results.

- There is some variability in the readings due to the following reasons:
  - Survey accuracy.
  - Nature of the plastic soils (shrinkage and swelling depending on moisture levels)
  - Heaving of the material due to machinery working close by the pins and plates to achieve compaction.
  - Damage to the monitoring pins, for example the sudden drop in the reading for Plate 3 was due to the plate being bumped by a machine so the readings were reset following the incident.

At the time of writing, it is understood that settlement monitoring is ongoing and will be managed by a newly appointed Geotechnical Engineer to the project.

5 Summary

Based on the information provided by the Contractor, our site observations and testing we consider that the engineered fill placed across the site over the 2022/2023 Earthworks seasons meets the requirements for Engineered fill in accordance with NZS4431:1989.

6 Limitations

This Letter has been prepared in accordance with the brief provided to us, the contents of the letter are understood to be used as part of a Geotechnical Completion Report that will be prepared by a Client appointed third-party Geotechnical Engineer in the future, when the works are complete. The Certifying Engineer will still need to satisfy themselves as to the quality of the earthworks for land development and subdivision, Aurecon New Zealand Ltd accepts no liability for the use of the data, opinions and recommendations given in this letter by a third-party.

Subsurface conditions, such as groundwater levels, can change over time, as earthworks stabilise, and static groundwater conditions equilibrate. This should be borne in mind, particularly if this letter is referred to after a protracted delay. Additionally, as earthworks are still on-going, ground conditions are likely to change from the time of preparation of this letter, therefore it is recommended that the recommendations provided in the original geotechnical reports are revised in a Geotechnical Completion Report upon completion of the project.

Yours sincerely

Letter prepared by

David Bosse

Senior Engineering Geologist

Reviewed by:

James Muirson

Lead Engineering Geologist

Verified by:

Wilhelm Nel

Land Infrastructure Practise Lead.

Appendix A
Consented Drawings

Auckland Council

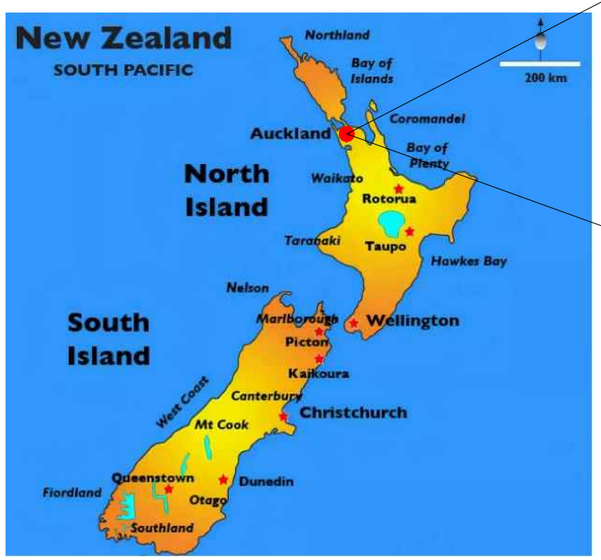
BUN60390224

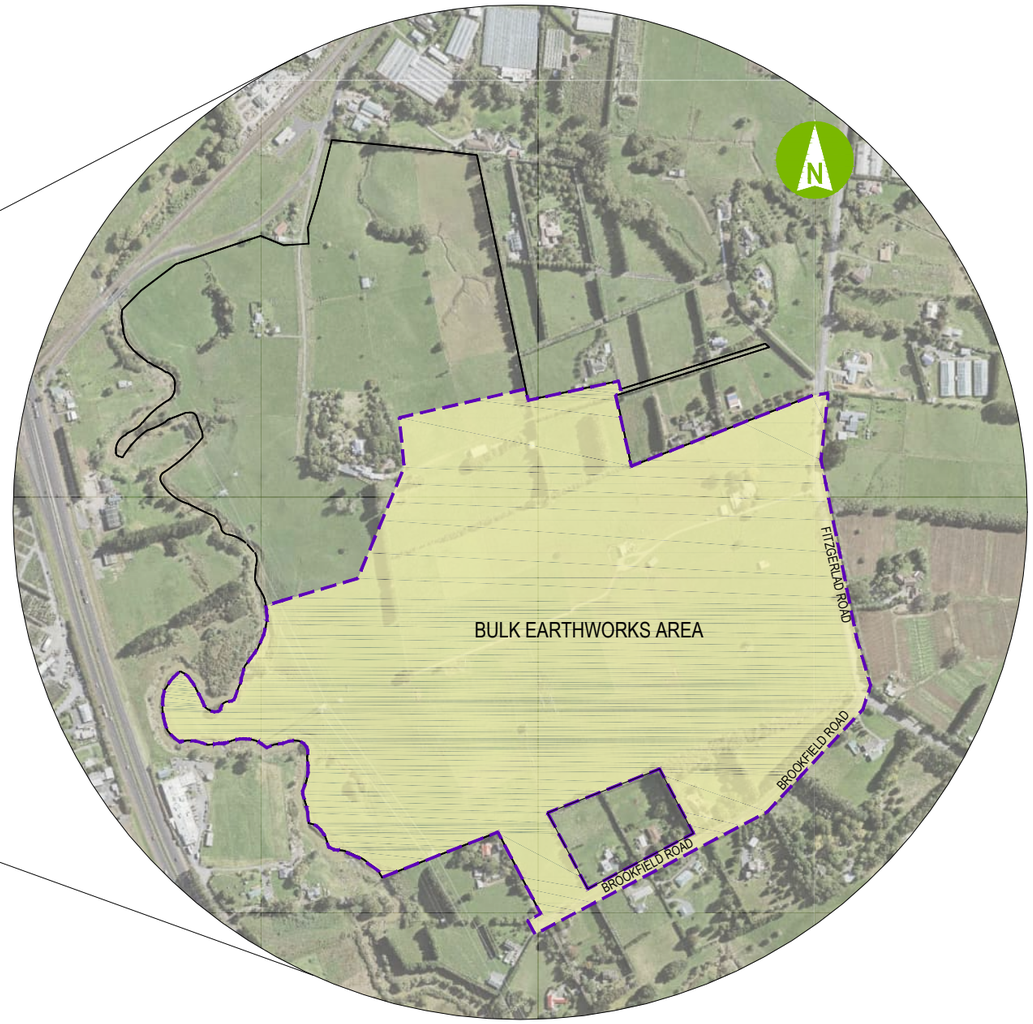
Approved Resource Consent Plan

13/04/2022

DRAWING LIST

EARHTWORKS		
510611-0100-DRG-CC-0000	COVER SHEET	C
510611-0100-DRG-CC-0001	EXISTING SITE LAYOUT PLAN	B
510611-0100-DRG-CC-0002	CUT AND FILL LAYOUT PLAN	C
510611-0100-DRG-CC-0003	DESIGN CONTOUR LAYOUT PLAN	C
510611-0100-DRG-CC-0011	EROSION AND SEDIMENT CONTROL DETAIL - SHEET 1	B
510611-0100-DRG-CC-0012	EROSION AND SEDIMENT CONTROL DETAIL - SHEET 2	B
510611-0100-SKT-CC-0005	EROSION AND SEDIMENT CONTROL PLAN STARTING SEQUENCE - SHEET 1	B
510611-0100-SKT-CC-0006	EROSION AND SEDIMENT CONTROL PLAN SEQUENCING SECOND PHASE - SHEET 2	B
510611-0100-SKT-CC-0007	EROSION AND SEDIMENT CONTROL PLAN SEQUENCING FINAL PHASE - SHEET 3	B
510611-0100-SKT-CC-0008	EROSION AND SEDIMENT CONTROL PLAN CLOSE-UP AREAS	A
UTILITIES		
510611-0100-DRG-CC-0021	TRANSMISSION POWERLINE PLAN AND SECTIONS	C
510611-0100-DRG-UT-0030	EXISTING UTILITIES LAYOUT PLAN - SHEET 1	B





LOCALITY PLAN

ABN: 54 005 139 873

FOR CONSENT

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
C	2021-12-10	ISSUED FOR CONSENT: REVISED CONTENT	W.NEL
B	2021-10-29	ISSUED FOR CONSENT	W.NEL
A	2021-05-21	ISSUED FOR CONSENT	W.NEL

SCALE	AS SHOWN
SIZE	A1
DRAWN	D.SANTOS
DESIGNED	J.A.VORSTER
REVIEWED	J.A.VORSTER

FOR CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE 2021-12-10
W.NEL

PROJECT: KIWI PROPERTY - DRURY

TITLE: COVER SHEET

DRAWING No.: 510611 - 0100 - DRG - CC - 0000 - C

PROJECT No.	AREA	TYPE	DISC	NUMBER	REV
510611	0100	DRG	CC	0000	C

NOTE:

1. BOUNDARY POSITIONS, ROAD WIDTHS AND AREAS ARE INDICATIVE ONLY AND ARE SUBJECT TO SURVEY.
2. THIS PLAN HAS BEEN PREPARED FOR THE PURPOSE OF FIRST STAGE APPROVAL UNDER THE COVID RECOVERY (FAST TRACK CONSENTING) ACT 2020.
3. HORIZONTAL DATUM: NZGD2000 MOUNT EDEN.

AREAS:

DEVELOPMENT AREA = 261 870 m²

LEGEND

- CADASTRAL BOUNDARIES
- PROPOSED DEVELOPMENT BOUNDARY
- EXISTING COUNTOURS

HINGAIA STREAM

LEGAL ROAD (UNFORMED)

FITZGERALD ROAD

BROOKFIELD ROAD

BROOKFIELD ROAD

20 0 40 80m

SCALE 1:2000

Filename: C:\USERS\MAX.KORAKOA\DOCS\AURECON\510611 - DRURY CENTRE PROJECT\1.0 AURECON'S DELIVERABLES\06\03 DRAWING, WORKING & NOTIONS, BULK EARTHWORK CONSENT_CAD FILES\510611-0100-DRG-CC-0001.DWG

Plot Date: 2021-10-29 9:04:09 Office: NZCHC

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	21.05.21	ISSUED FOR CONSENT	W.NEL
B	29.10.21	ISSUED FOR CONSENT	W.NEL

SCALE	SIZE
AS SHOWN	A1

DRAWN: M.KAUR
DESIGNED: J.A.VORSTER
REVIEWED: W.NEL

FOR CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE
29.10.2021
W.NEL

PROJECT: KIWI PROPERTY - DRURY

TITLE: EXISTING SITE CONTOURS PLAN

DRAWING No.: PROJECT No. 510611 – WBS 0100 – TYPE DRG – DISC CC – NUMBER 0001 – REV B

CUT AND FILL RANGES		
FROM	TO	COLOUR
≤-9.5	-9.0	
-9.0	-8.5	
-8.5	-8.0	
-8.0	-7.5	
-7.5	-7.0	
-7.0	-6.5	
-6.5	-6.0	
-6.0	-5.5	
-5.5	-5.0	
-5.0	-4.5	
-4.5	-4.0	
-4.0	-3.5	
-3.5	-3.0	
-3.0	-2.5	
-2.5	-2.0	
-2.0	-1.5	
-1.5	-1.0	

-1.0	-0.5	
-0.5	0	
0	0.5	
0.5	1.0	
1.0	1.5	
1.5	2.0	
2.0	2.5	
2.5	3.0	
3.0	3.5	
3.5	4.0	
4.0	4.5	
4.5	5.0	
5.0	5.5	
5.5	6.0	
6.0	6.5	
6.5	7.0	
7.0	7.5	
7.5	8.0	
8.0	8.5	
8.5	≥9.0	

TABLE 1: OVERALL CUT AND FILL VOLUMES (m³)

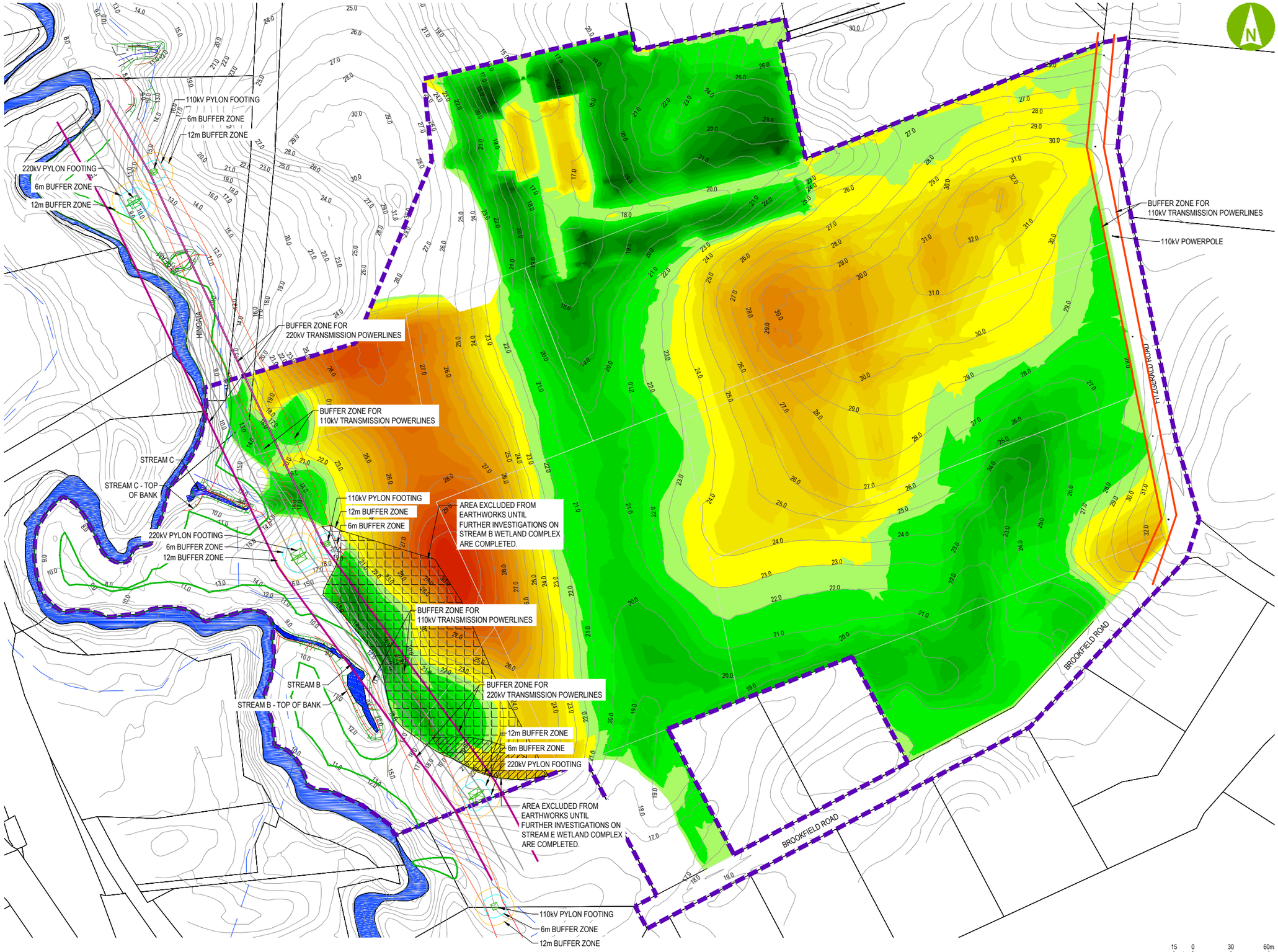
CUT	-331 100 m³
FILL	330 000 m³
BALANCE	-1 100 m³

TABLE 2: TOPSOIL VOLUME (m³)

67,000 m³

LEGEND

- CADASTRAL BOUNDARIES
- EXISTING REGISTRAR OF TITLE
- PROPOSED DEVELOPMENT BOUNDARY
- BUFFER ZONE FOR 110kV TRANSMISSION POWERLINES
- BUFFER ZONE FOR 220kV TRANSMISSION POWERLINES
- EXTENT OF WORKS
- 100 YEAR FLOOD LEVEL EXTENT



Plot Date: Office: AUBAU Falvanne

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
C	2021-12-10	STREAM B WETLAND AFFECTED AREA INCLUDED	W.NEL
B	2021-10-29	ISSUED FOR CONSENT	W.NEL
A	2021-05-21	ISSUED FOR CONSENT	W.NEL

SCALE	1:1500
SIZE	A1
DRAWN	D.SANTOS
DESIGNED	J.WARLICH-KOOLE
REVIEWED	J.A.VORSTER

FOR CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE
2021-12-10
W.NEL

PROJECT: KIWI PROPERTY - DRURY

TITLE: CUT AND FILL LAYOUT PLAN

DRAWING No.: PROJECT No. 510611 – AREA 0100 – TYPE DRG – DISC CC – NUMBER 0002 – REV C

LEGEND

- CADASTRAL BOUNDARIES
- PROPOSED DEVELOPMENT BOUNDARY
- PROPOSED MAJOR CONTOUR 5m INTERVALS
- PROPOSED MINOR CONTOUR 1m INTERVALS
- EXTENT OF WORKS
- 100 YEAR FLOOD LEVEL EXTENT

110kV PYLON FOOT

220kV PYLON FOOT

EXISTING 220kV TRANSMISSION POWERLINES

EXISTING 110kV TRANSMISSION POWERLINES

AREA EXCLUDED FROM EARTHWORKS UNTIL FURTHER INVESTIGATIONS ON STREAM B WETLAND COMPLEX ARE COMPLETED.

AREA EXCLUDED FROM EARTHWORKS UNTIL FURTHER INVESTIGATIONS ON BROOKFIELD STREAM/WETLAND COMPLEX ARE COMPLETED.

FITZGERALD ROAD

BROOKFIELD ROAD

N

SCALE 1:1500

NOTES

1. PROPOSED CONTOURS ARE DRAFT ONLY.

Plot Date: Office: AUKAU Filename:

www.aurecongroup.com

CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
C	2021-12-10	STREAM B WETLAND AFFECTED AREA INCLUDED	W.NEL
B	2021-10-29	ISSUED FOR CONSENT	W.NEL
A	2021-05-21	ISSUED FOR CONSENT	W.NEL

SCALE	SIZE
1:1500	A1

DRAWN: D.SANTOS
DESIGNED: J.WARLICH-KOOLE
REVIEWED: J.A.VORSTER

FOR CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE
2021-12-10
W.NEL

PROJECT: KIWI PROPERTY - DRURY

TITLE: DESIGN CONTOUR LAYOUT PLAN

DRAWING No.: 510611 – 0100 – DRG – CC – 0003 – C

PROJECT No.	AREA	TYPE	DISC	NUMBER	REV
510611	0100	DRG	CC	0003	C

LEGEND

- SITE BOUNDARY
- CATCHMENTS
- CULVERT CROSSING
- EXISTING OVERLAND FLOW PATH
- DIRTY WATER DIVERSION SWALE
- CLEAN WATER DIVERSION SWALE
- EXISTING DRAIN TO BE PROTECTED
- PROPOSED SILT/SUPER SILT FENCE
- STABILISED CONSTRUCTION ENTRANCEWAY WITH SHAKER RAMP
- SRP — SEDIMENT RETENTION POND
- SLOPE DIRECTION OF EXISTING GROUND
- OUTLET STRUCTURE
- DEB — DECANTING EARTH BUND
- LINING TO CHANNELS OR CHECK DAMS
- FLOW DIRECTION OF PROPOSED SURFACE
- EXISTING CONTOUR

- DISTURBED AREA
- STABILIZED AREA

	STARTING STAGE EARTHWORKS		STAGE 2 EARTHWORKS		FINAL STAGE EARTHWORKS	
	SEASON 2021/2		SEASON 2022/3		SEASON 2022/3	
SRP	CATCHMENT	AREA (ha)	CATCHMENT	AREA (ha)	CATCHMENT	AREA (ha)
SRP 1	A11	4.75	A9	4.70	A9	4.70
~~SRP 2~~	-	-	-	-	-	-
SRP 3	-	-	A3	-	A3	1.52
SRP 4	-	-	A10	2.87	A10	2.87
SRP 5	A4 & A5	4.80	A4	2.20	A4 & A6	2.90
SRP 6	A8	4.20	A8	4.10	A7	2.00
	STAGE AREA TOTAL	13.8	STAGE AREA TOTAL	13.9	STAGE AREA TOTAL	14.0

TABLE

POND	POND SIZING: MAX CATCHMENT SIZE (Ha)	AREA (A²)	LENGTH (m)	WIDTH (m)
SRP1	4.8	1200	60	20
SRP5	4.8	1200	60	20
SRP6	4.2	1200	60	20
DEB1 & 2	0.29	75	15	5

SIZING IN COMPLIANCE WITH GD05 F1.0 STRUCTURAL APPROACHES WITH 5:1 RATIO FOR SRP.

1. PROPOSED PLAN IS INDICATIVE ONLY. CONTRACTOR TO SUBMIT EROSION AND SEDIMENT PLAN INCORPORATING PROPOSED CONSTRUCTION METHODOLOGY AND STAGING FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN SELECTED BASED ON THE ARC GD05 GUIDANCE DOCUMENT.
3. CADASTRAL BOUNDARIES SHOWN HAVE BEEN SOURCED FROM LANDONLINE XML DATA AND ARE SUBJECT TO SURVEY
4. DATUM: AUCKLAND VERTICAL DATUM (MSL) 1946
5. SITE TO BE STABILISED ON COMPLETION.
6. NUMBER OF STABILISED ENTRANCES IS INDICATIVE. ACTUAL NUMBER TO BE DETERMINE ON SITE AND AGREED WITH ENGINEER AND AUCKLAND COUNCIL.
7. ALL SEDIMENT RETENTION DEVICES TO BE CHEMICALLY TREATED AS PER THE RECOMMENDATIONS CONTAINED IN GD05.
8. SEDIMENT BASINS INDICATIVE SIZE ONLY.
9. CONTRACTOR TO CONFIRM LOCATION OF SITE OFFICE AND PROPOSED STOCKPILE LOCATIONS.
10. REFER TO DRAWINGS 510611-0100-DRG-CC-1100,1101 & 1102 FOR EROSION AND SEDIMENT CONTROL DETAILS.
11. SEQUENCING IS DEPENDENT ON CONTRACTOR APPROACH, THEREFORE INDICATIVE ONLY

STARTING STAGE

STAGING OF EARTHWORKS TO BE FINALIZED BY APPOINTED CONTRACTOR.

INDICATIVE ONLY.

SCALE 1:1500

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	06.12.21	ISSUED FOR INFORMATION	W.NEL
B	15.12.21	COMMENTS ADDRESSED	W.NEL

SCALE	1:1500
SIZE	A1
DRAWN	M.KAUR
DESIGNED	J.TUCKER
REVIEWED	J.A.VORSTER

FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED
DATE 06.12.21
W.NEL

PROJECT	KIWI PROPERTY - DRURY
TITLE	EROSION AND SEDIMENT CONTROL PLAN STARTING SEQUENCE SHEET 1 OF 3
DRAWING No.	510611 – 0100 – SKT – CC – 0005 – B

(PROJECT No. | WBS | TYPE | DISC | NUMBER | REV)

LEGEND

- SITE BOUNDARY
- CATCHMENTS
- CULVERT CROSSING
- EXISTING OVERLAND FLOW PATH
- DIRTY WATER DIVERSION SWALE
- CLEAN WATER DIVERSION SWALE
- EXISTING DRAIN TO BE PROTECTED
- PROPOSED SILT/SUPER SILT FENCE
- STABILISED CONSTRUCTION ENTRANCEWAY WITH SHAKER RAMP
- SEDIMENT RETENTION POND
- SLOPE DIRECTION OF EXISTING GROUND
- OUTLET STRUCTURE
- DECANTING EARTH BUND
- LINING TO CHANNELS OR CHECK DAMS
- FLOW DIRECTION OF SURFACE
- EXISTING CONTOUR

- DISTURBED AREA
- STABALIZED AREA

	STARTING STAGE EARTHWORKS		STAGE 2 EARTHWORKS		FINAL STAGE EARTHWORKS	
	SEASON 2021/2		SEASON 2022/3		SEASON 2022/3	
SRP	CATCHMENT	AREA (ha)	CATCHMENT	AREA (ha)	CATCHMENT	AREA (ha)
SRP 1	A11	4.75	A9	4.70	A9	4.70
SRP 2	-	-	-	-	-	-
SRP 3	-	-	A3	-	A3	1.52
SRP 4	-	-	A10	2.87	A10	2.87
SRP 5	A4 & A5	4.80	A4	2.20	A4 & A6	2.90
SRP 6	A8	4.20	A8	4.10	A7	2.00
	STAGE AREA TOTAL	13.8	STAGE AREA TOTAL	13.9	STAGE AREA TOTAL	14.0

TABLE

POND	POND SIZING: MAX CATCHMENT SIZE (Ha)	AREA (A^2)	LENGTH (m)	WIDTH (m)
SRP1	4.8	1200	60	20
SRP2	0.0	0.0		
SRP3	1.6	588	42	14
SRP4	2.9	972	54	18
SRP5	4.8	1200	60	20
SRP6	4.2	1200	60	20
DEB 1, 2 & 3	0.29	Volume required = 58m cube		

1. PROPOSED PLAN IS INDICATIVE ONLY. CONTRACTOR TO SUBMIT EROSION AND SEDIMENT PLAN INCORPORATING PROPOSED CONSTRUCTION METHODOLOGY AND STAGING FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN SELECTED BASED ON THE ARC GD05 GUIDANCE DOCUMENT.
3. CADASTRAL BOUNDARIES SHOWN HAVE BEEN SOURCED FROM LANDONLINE XML DATA AND ARE SUBJECT TO SURVEY
4. DATUM: AUCKLAND VERTICAL DATUM (MSL) 1946
5. SITE TO BE STABILISED ON COMPLETION.
6. NUMBER OF STABILISED ENTRANCES IS INDICATIVE. ACTUAL NUMBER TO BE DETERMINE ON SITE AND AGREED WITH ENGINEER AND AUCKLAND COUNCIL.
7. ALL SEDIMENT RETENTION DEVICES TO BE CHEMICALLY TREATED AS PER THE RECOMMENDATIONS CONTAINED IN GD05.
8. SEDIMENT BASINS INDICATIVE SIZE ONLY.
9. CONTRACTOR TO CONFIRM LOCATION OF SITE OFFICE AND PROPOSED STOCKPILE LOCATIONS.
10. REFER TO DRAWINGS 510611-0100-DRG-CC-1100,1101 & 1102 FOR EROSION AND SEDIMENT CONTROL DETAILS.
11. SEQUENCING IS DEPENDENT ON CONTRACTOR APPROACH, THEREFORE INDICATIVE ONLY

SECOND STAGE
STAGING OF EARTHWORKS TO BE FINALIZED BY APPOINTED CONTRACTOR.

INDICATIVE ONLY.

15 0 30 60m
SCALE 1:1500

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	06.12.21	ISSUED FOR INFORMATION	W.NEL
B	15.12.21	COMMENTS ADDRESSED	W.NEL

SCALE	1:1500
SIZE	A1
DRAWN	M.KAUR
DESIGNED	J.TUCKER
REVIEWED	J.A.VORSTER

FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED
DATE 06.12.21
W.NEL

PROJECT	KIWI PROPERTY - DRURY
TITLE	EROSION AND SEDIMENT CONTROL PLAN SEQUENCING SECOND STAGE SHEET 2 OFF 3
DRAWING No.	PROJECT No. 510611 – WBS 0100 – TYPE SKT – DISC CC – NUMBER 0006 – REV A

LEGEND

- SITE BOUNDARY
- CATCHMENTS
- CULVERT CROSSING
- EXISTING OVERLAND FLOW PATH
- DIRTY WATER DIVERSION SWALE
- CLEAN WATER DIVERSION SWALE
- EXISTING DRAIN TO BE PROTECTED
- PROPOSED SILT/SUPER SILT FENCE
- STABILISED CONSTRUCTION ENTRANCEWAY WITH SHAKER RAMP
- SRP — SEDIMENT RETENTION POND
- SLOPE DIRECTION OF EXISTING GROUND
- OUTLET STRUCTURE
- DEB — DECANTING EARTH BUND
- LINING TO CHANNELS OR CHECK DAMS
- FLOW DIRECTION OF SURFACE
- EXISTING CONTOUR

- DISTURBED AREA
- STABALIZED AREA

	STARTING STAGE EARTHWORKS		STAGE 2 EARTHWORKS		FINAL STAGE EARTHWORKS	
	SEASON 2021/2		SEASON 2022/3		SEASON 2022/3	
SRP	CATCHMENT	AREA (ha)	CATCHMENT	AREA (ha)	CATCHMENT	AREA (ha)
SRP 1	A11	4.75	A9	4.70	A9	4.70
~~SRP 2~~	-	-	-	-	-	-
SRP 3	-	-	A3	-	A3	1.52
SRP 4	-	-	A10	2.87	A10	2.87
SRP 5	A4 & A5	4.80	A4	2.20	A4 & A6	2.90
SRP 6	A8	4.20	A8	4.10	A7	2.00
	STAGE AREA TOTAL	13.8	STAGE AREA TOTAL	13.9	STAGE AREA TOTAL	14.0

TABLE

POND	POND SIZING: MAX CATCHMENT SIZE (Ha)	AREA (A²)	LENGTH (m)	WIDTH (m)
SRP1	4.8	1200	60	20
SRP2	0.0	0.0		
SRP3	1.6	588	42	14
SRP4	2.9	972	54	18
SRP5	4.8	1200	60	20
SRP6	4.2	1200	60	20
DEB 1, 2 & 3	0.29	Volume required = 58m cube		

SIZING IN COMPLIANCE WITH GD05 F1.0 STRUCTURAL APPROACHES WITH 5:1 RATIO FOR SRP.

1. PROPOSED PLAN IS INDICATIVE ONLY. CONTRACTOR TO SUBMIT EROSION AND SEDIMENT PLAN INCORPORATING PROPOSED CONSTRUCTION METHODOLOGY AND STAGING FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN SELECTED BASED ON THE ARC GD05 GUIDANCE DOCUMENT.
3. CADASTRAL BOUNDARIES SHOWN HAVE BEEN SOURCED FROM LANDONLINE XML DATA AND ARE SUBJECT TO SURVEY
4. DATUM: AUCKLAND VERTICAL DATUM (MSL) 1946
5. SITE TO BE STABILISED ON COMPLETION.
6. NUMBER OF STABILISED ENTRANCES IS INDICATIVE. ACTUAL NUMBER TO BE DETERMINE ON SITE AND AGREED WITH ENGINEER AND AUCKLAND COUNCIL.
7. ALL SEDIMENT RETENTION DEVICES TO BE CHEMICALLY TREATED AS PER THE RECOMMENDATIONS CONTAINED IN GD05.
8. SEDIMENT BASINS INDICATIVE SIZE ONLY.
9. CONTRACTOR TO CONFIRM LOCATION OF SITE OFFICE AND PROPOSED STOCKPILE LOCATIONS.
10. REFER TO DRAWINGS 510611-0100-DRG-CC-1100,1101 & 1102 FOR EROSION AND SEDIMENT CONTROL DETAILS.
11. SEQUENCING IS DEPENDENT ON CONTRACTOR APPROACH, THEREFORE INDICATIVE ONLY

FINAL STAGE
STAGING OF EARTHWORKS TO BE FINALIZED BY APPOINTED CONTRACTOR.

INDICATIVE ONLY.

SCALE 1:1500

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	06.12.21	ISSUED FOR INFORMATION	W.NEL
B	15.12.21	COMMENTS ADDRESSED	W.NEL

SCALE	1:1500
SIZE	A1
DRAWN	M.KAUR
DESIGNED	J.TUCKER
REVIEWED	J.A.VORSTER

FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED
DATE 06.12.21
W.NEL

PROJECT: KIWI PROPERTY - DRURY

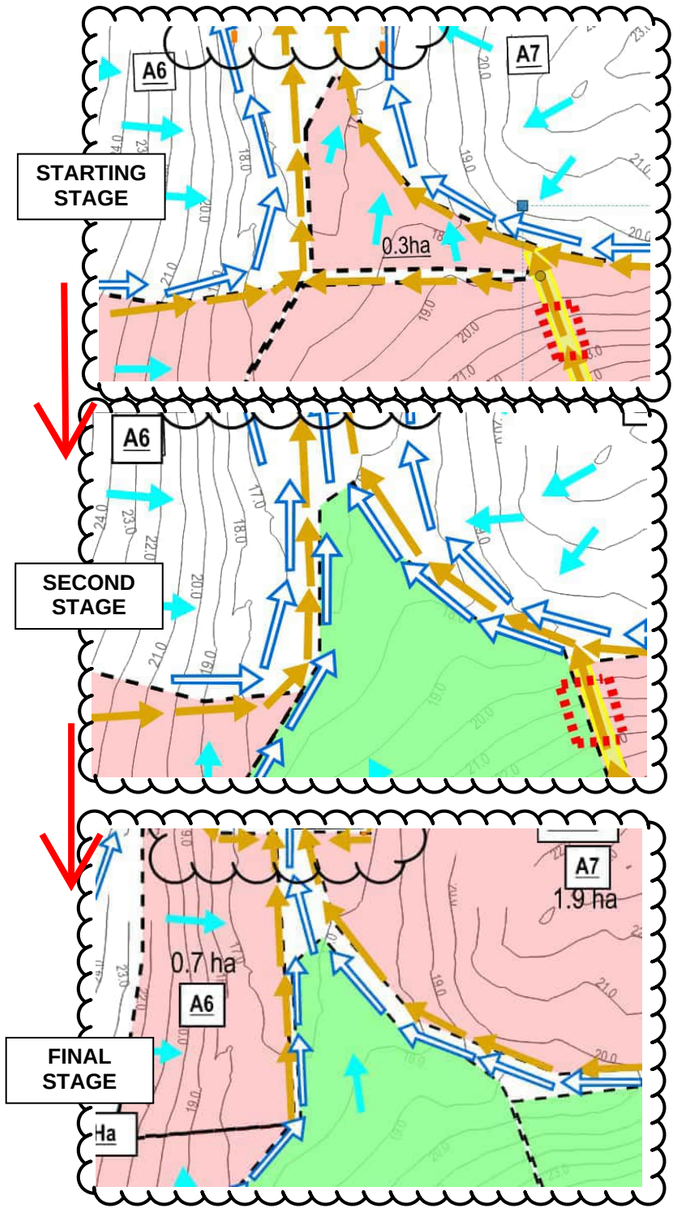
TITLE: EROSION AND SEDIMENT CONTROL PLAN SEQUENCING FINAL STAGE SHEET 3 OFF 3

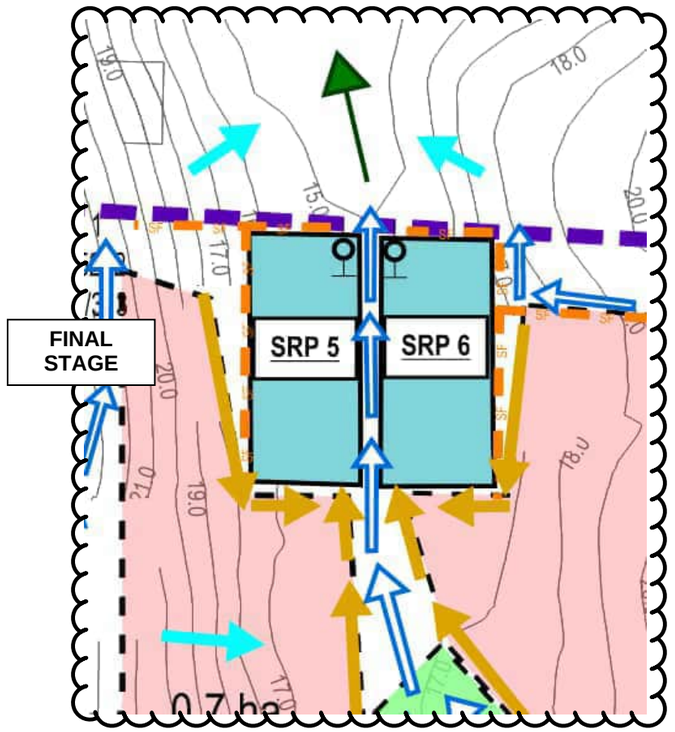
DRAWING No.: PROJECT No. 510611 – WBS 0100 – TYPE SKT – DISC CC – NUMBER 0007 – REV A

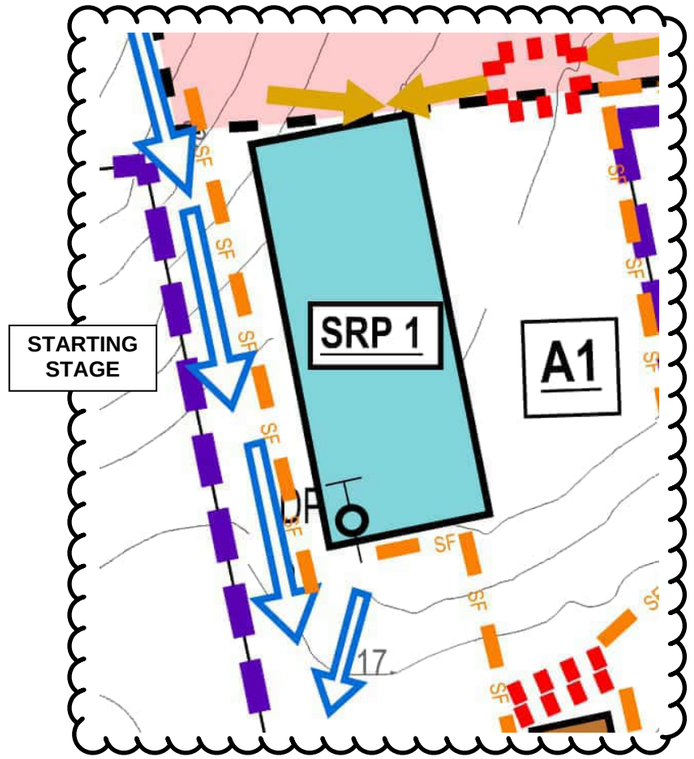
LEGEND

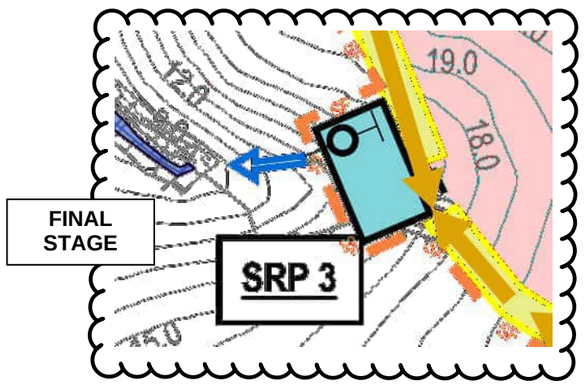
- SITE BOUNDARY
- CATCHMENTS
- CULVERT CROSSING
- EXISTING OVERLAND FLOW PATH
- DIRTY WATER DIVERSION SWALE
- CLEAN WATER DIVERSION SWALE
- EXISTING DRAIN TO BE PROTECTED
- SF — PROPOSED SILT/SUPER SILT FENCE
- STABILISED CONSTRUCTION ENTRANCEWAY WITH SHAKER RAMP
- SRP — SEDIMENT RETENTION POND
- SLOPE DIRECTION OF EXISTING GROUND
- OUTLET STRUCTURE
- DEB — DECANTING EARTH BUND
- LINING TO CHANNELS OR CHECK DAMS
- FLOW DIRECTION OF SURFACE
- EXISTING CONTOUR

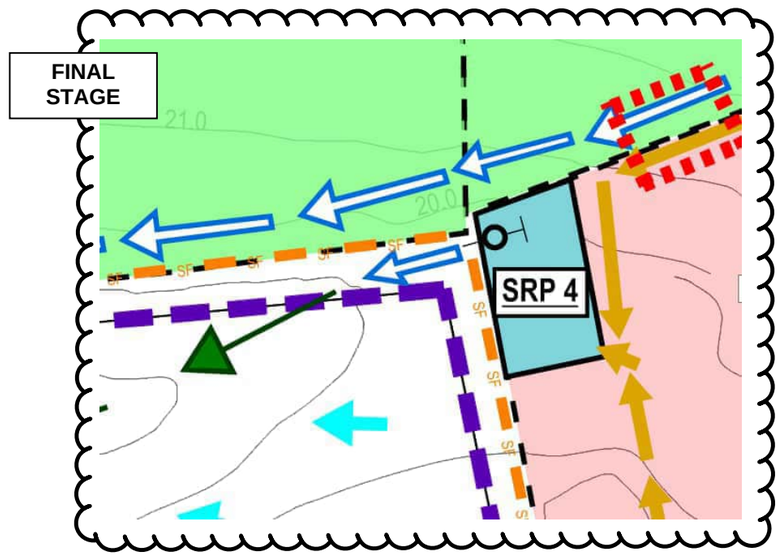
- DISTURBED AREA
- STABALIZED AREA











1. PROPOSED PLAN IS INDICATIVE ONLY. CONTRACTOR TO SUBMIT EROSION AND SEDIMENT PLAN INCORPORATING PROPOSED CONSTRUCTION METHODOLOGY AND STAGING FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN SELECTED BASED ON THE ARC GD05 GUIDANCE DOCUMENT.
3. CADASTRAL BOUNDARIES SHOWN HAVE BEEN SOURCED FROM LANDONLINE XML DATA AND ARE SUBJECT TO SURVEY
4. DATUM: AUCKLAND VERTICAL DATUM (MSL) 1946
5. SITE TO BE STABILISED ON COMPLETION.
6. NUMBER OF STABILISED ENTRANCES IS INDICATIVE. ACTUAL NUMBER TO BE DETERMINE ON SITE AND AGREED WITH ENGINEER AND AUCKLAND COUNCIL.
7. ALL SEDIMENT RETENTION DEVICES TO BE CHEMICALLY TREATED AS PER THE RECOMMENDATIONS CONTAINED IN GD05.
8. SEDIMENT BASINS INDICATIVE SIZE ONLY.
9. CONTRACTOR TO CONFIRM LOCATION OF SITE OFFICE AND PROPOSED STOCKPILE LOCATIONS.
10. REFER TO DRAWINGS 510611-0100-DRG-CC-1100,1101 & 1102 FOR EROSION AND SEDIMENT CONTROL DETAILS.
11. SEQUENCING IS DEPENDENT ON CONTRACTOR APPROACH, THEREFORE INDICATIVE ONLY

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	15.12.21	ISSUED FOR INFORMATION	W.NEL

SCALE	SIZE
1:1500	A1

DRAWN: M.KAUR
DESIGNED: J.TUCKER
REVIEWED: J.A.VORSTER

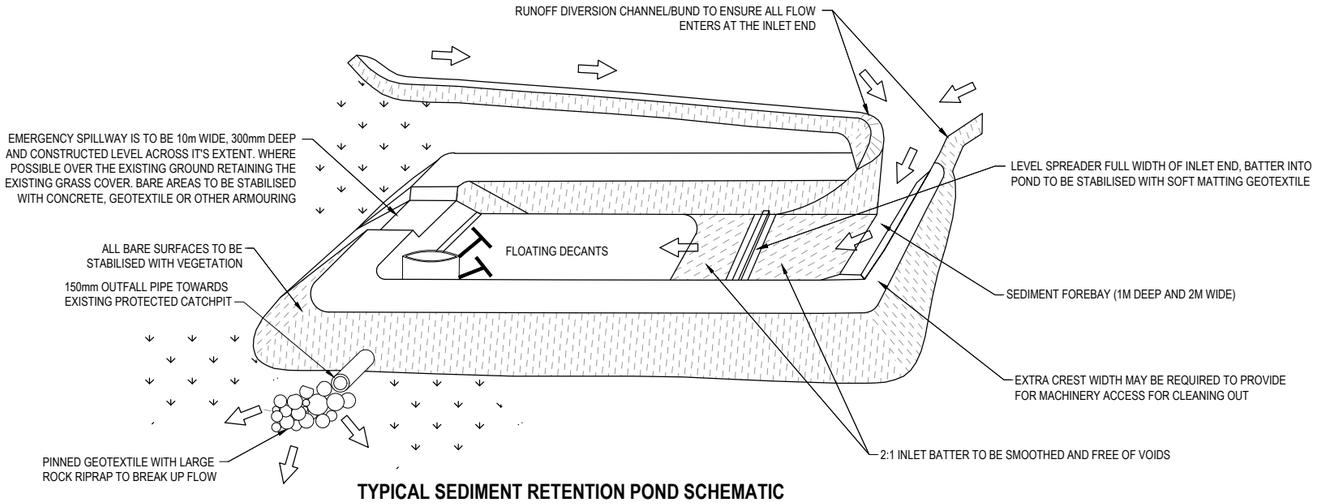
FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED
DATE 15.12.21
W.NEL

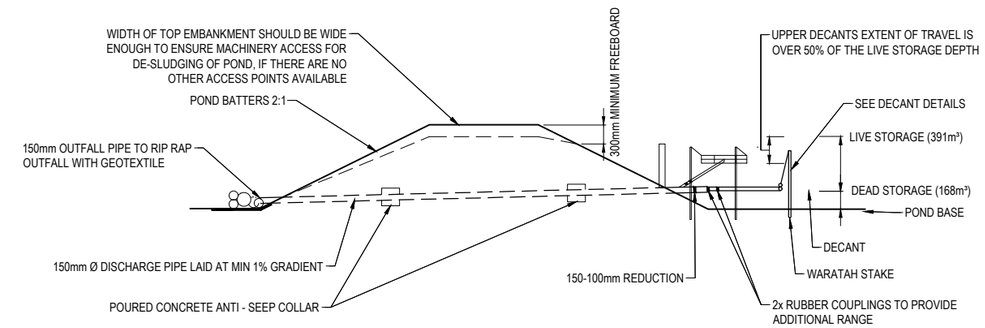
PROJECT: KIWI PROPERTY - DRURY

TITLE: EROSION AND SEDIMENT CONTROL PLAN "CLOSE-UP" OF AREAS

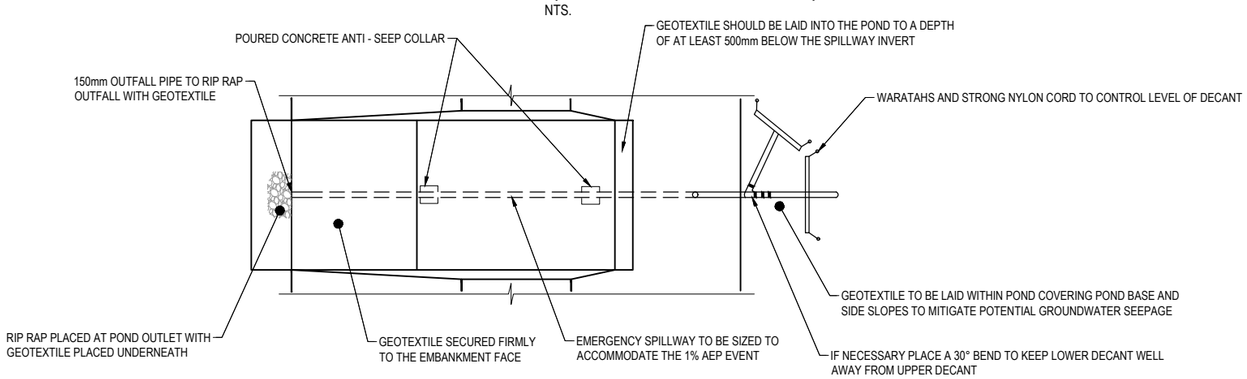
DRAWING No.: PROJECT No. 510611 – WBS 0100 – TYPE SKT – DISC CC – NUMBER 0008 – REV A



TYPICAL SEDIMENT RETENTION POND SCHEMATIC
(REFER TO GD05 SECTION F1.1)
NTS.



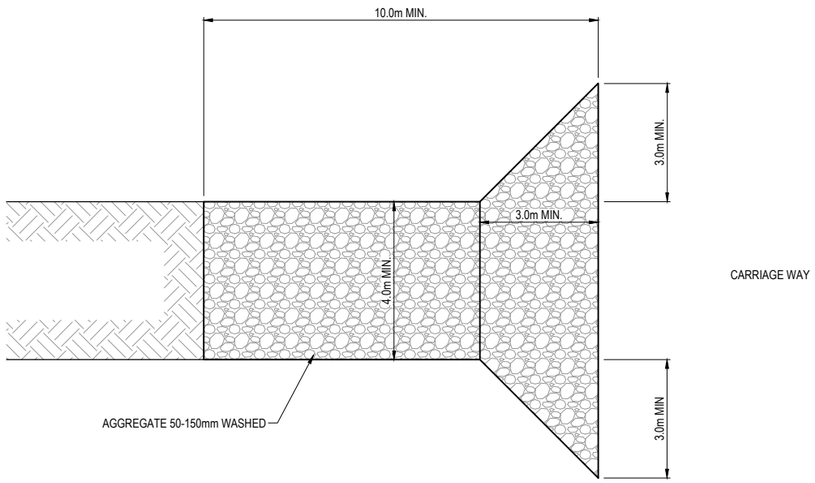
INDICATIVE CROSS SECTION
SEDIMENT RETENTION POND(REFER TO GD05 SECTION F1.1)
NTS.

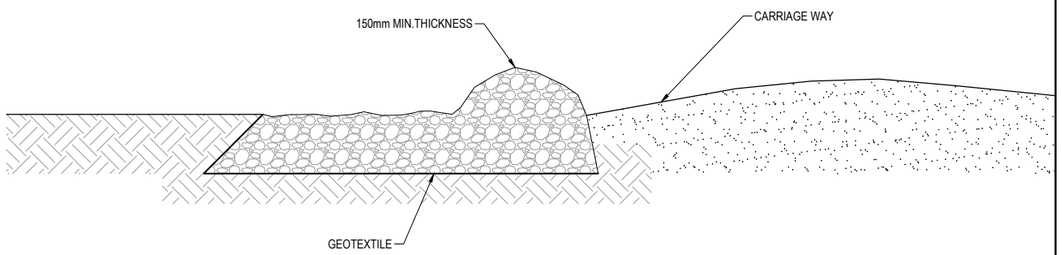


INDICATIVE PLAN DETAIL
SEDIMENT RETENTION POND FOR 1.5 TO 3 ha CATCHMENT (REFER TO GD05 SECTION F1.1)
NTS.

DESIGN PARAMETER	SPECIFICATION
AGGREGATE SIZE	50 - 150 mm WASHED AGGREGATE
MINIMUM THICKNESS	150mm
MINIMUM LENGTH	10m
MINIMUM WIDTH	4m

STABILISED ENTRANCEWAY SPECIFICATIONS





STABILISED CONSTRUCTION ENTRANCE
(REFER TO GD05 SECTION E2.6)
1:75

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
B	2021-10-29	ISSUED FOR CONSENT	W.NEL
A	2021-05-21	ISSUED FOR CONSENT	W.NEL

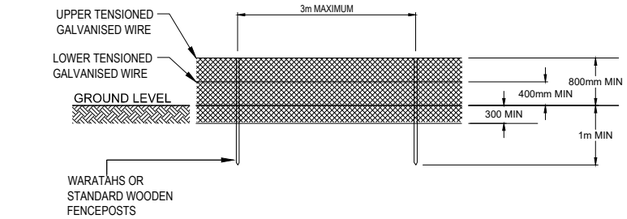
SCALE	SIZE
AS SHOWN	A1

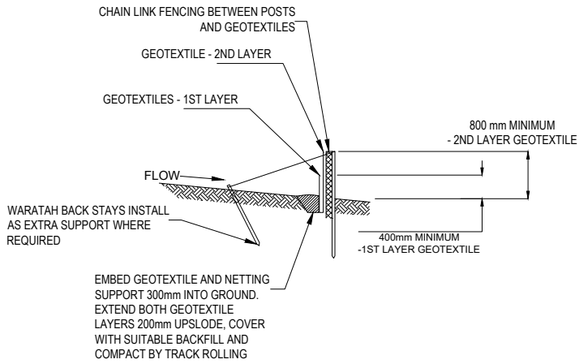
DRAWN: M.KAUR
DESIGNED: J.TUCKER
REVIEWED: J.A.VORSTER

FOR CONSENT
NOT FOR CONSTRUCTION
APPROVED
DATE
29.10.2021
W.NEL

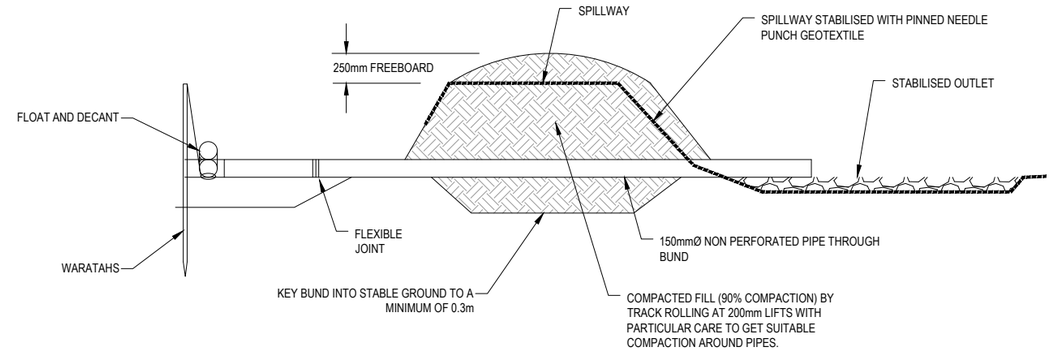
PROJECT: KIWI PROPERTY - DRURY
TITLE: EROSION AND SEDIMENT CONTROL DETAILS SHEET 1

DRAWING No. 510611 – 0100 – DRG – CC – 0011 – B
(PROJECT No. – AREA – TYPE – DISC – NUMBER – REV)

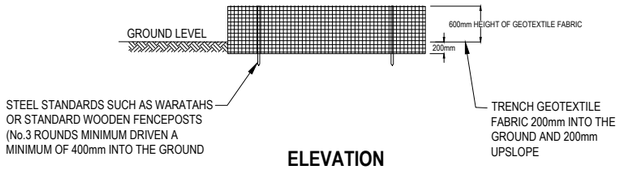




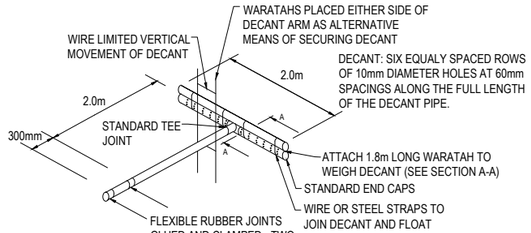
SUPER SILT FENCE DEATIL
1:50



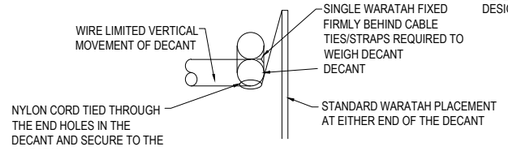
DECANTING EARTH BUND
1:25



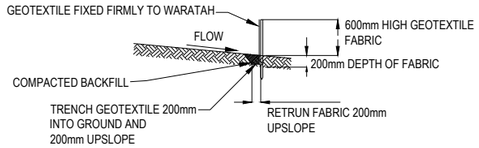
ELEVATION
1:50



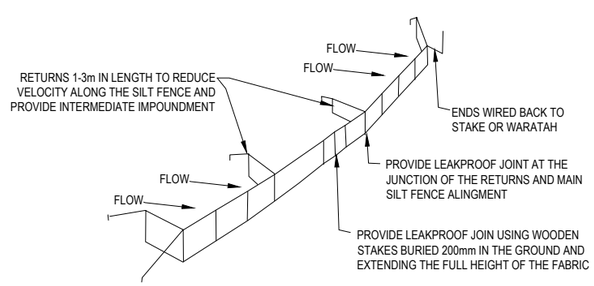
NOTES:
REFER TO ESCP FOR DECANT DESIGN & NUMBER OF HOLES.



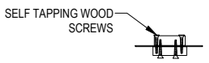
DECANT DETAIL
1:50



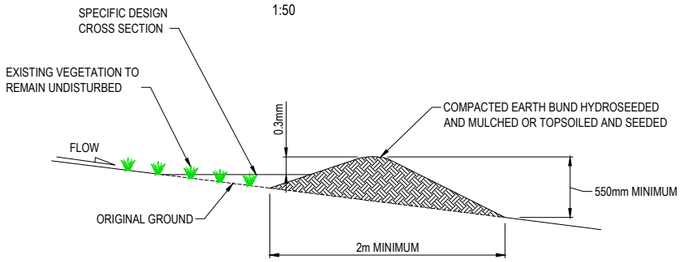
SILT FENCE CROSS SECTION
1:50



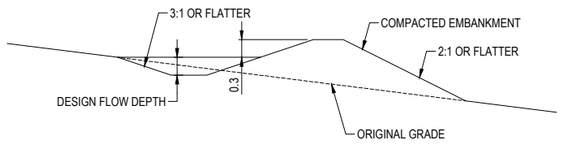
SILT FENCE RETURNS AND WIRE
1:50



STANDARD DETAIL FOR FABRIC JOIN
1:50



CLEAN WATER DIVERSION BUND DETAIL
1:50



DIRTY WATER DIVERSION CHANNEL DETAIL
1:50

250 0 500 1000mm
SCALE 1:25

500 0 1000 2000mm
SCALE 1:50

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
B	2021-10-29	ISSUED FOR CONSENT	W.NEL
A	2021-05-20	ISSUED FOR CONSENT	W.NEL

SCALE	SIZE
AS SHOWN	A1

DRAWN: M.KAUR
DESIGNED: J.TUCKER
REVIEWED: J.A.VORSTER

FOR CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE: 29.10.2021
W.NEL

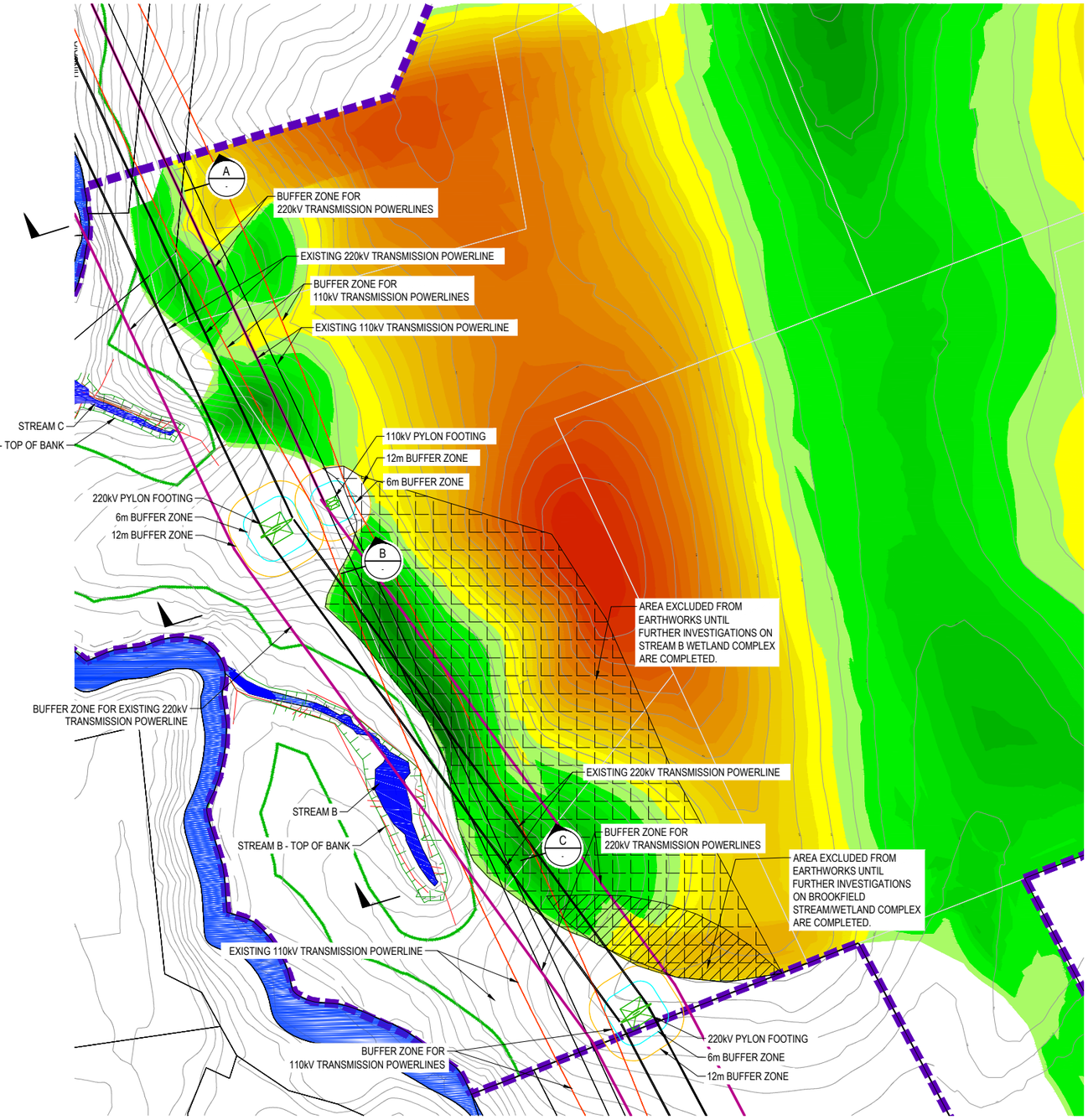
PROJECT: KIWI PROPERTY - DRURY

TITLE: EROSION AND SEDIMENT CONTROL DETAILS SHEET 2

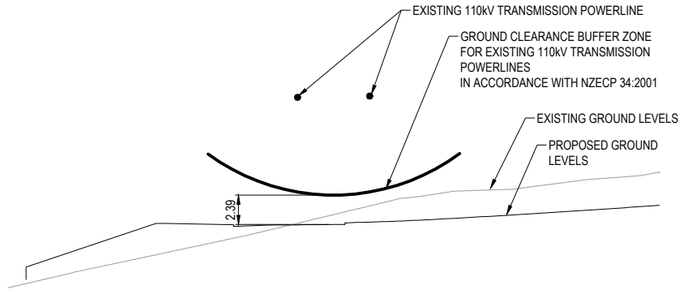
DRAWING No.	PROJECT No.	AREA	TYPE	DISC	NUMBER	REV
	510611	0100	DRG	CC	0012	B

CUT AND FILL RANGES		
FROM	TO	COLOUR
≤-9.5	-9.0	
-9.0	-8.5	
-8.5	-8.0	
-8.0	-7.5	
-7.5	-7.0	
-7.0	-6.5	
-6.5	-6.0	
-6.0	-5.5	
-5.5	-5.0	
-5.0	-4.5	
-4.5	-4.0	
-4.0	-3.5	
-3.5	-3.0	
-3.0	-2.5	
-2.5	-2.0	
-2.0	-1.5	
-1.5	-1.0	

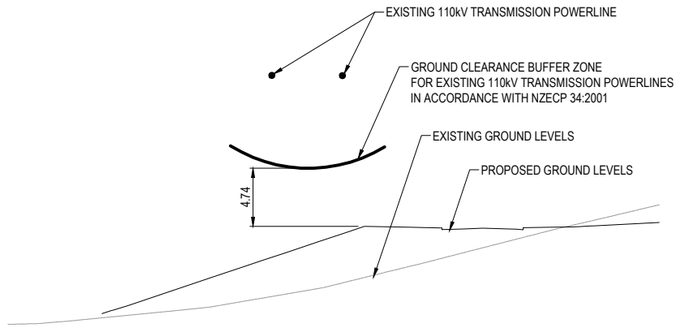
-1.0	-0.5	
-0.5	0	
0	0.5	
0.5	1.0	
1.0	1.5	
1.5	2.0	
2.0	2.5	
2.5	3.0	
3.0	3.5	
3.5	4.0	
4.0	4.5	
4.5	5.0	
5.0	5.5	
5.5	6.0	
6.0	6.5	
6.5	7.0	
7.0	7.5	
7.5	8.0	
8.0	8.5	
8.5	≥9.0	



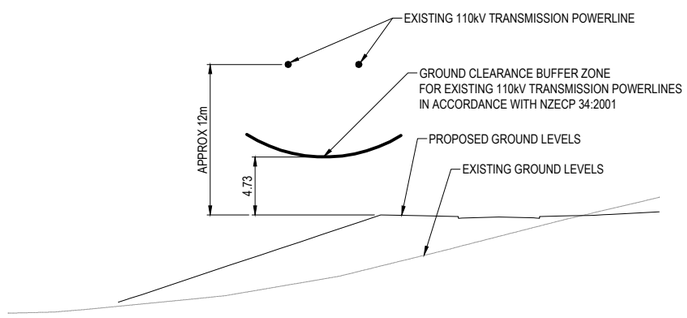
VIEW 1
1:1000



SECTION A
1:250



SECTION B
1:250



SECTION C
1:250

10 0 20 40m
SCALE 1:1000

Office: AUKAU Filename:
Plot Date:

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
C	2021-12-13	STREAM B WETLAND AFFECTED AREA INCLUDED	W.NEL
B	2021-10-29	ISSUED FOR CONSENT	W.NEL
A	2021-05-21	ISSUED FOR CONSENT	W.NEL

SCALE	1:1000
SIZE	A1
DRAWN	D.SANTOS
DESIGNED	J.WARLICH-KOOLE
REVIEWED	J.A.VORSTER

FOR CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE
2020-12-13
W.NEL

PROJECT	KIWI PROPERTY - DRURY
TITLE	TRANSMISSION POWERLINE PLAN AND SECTIONS

DRAWING No.	PROJECT No.	AREA	TYPE	DISC	NUMBER	REV
	510611	0100	DRG	CC	0021	C

EXISTING 220kV PYLON
EXISTING 110kV PYLON
EXISTING 220kV POWERLINES
EXISTING 110kV POWERLINES
EXISTING 220kV PYLON
EXISTING 110kV PYLON
EXISTING UTILITIES
EXISTING 220kV POWERLINES
EXISTING 110kV POWERLINES
EXISTING 220kV PYLON
EXISTING 110kV PYLON (OVERHEAD)
HINGAIA STREAM
FITZGERALD ROAD
BROOKFIELD ROAD
BROOKFIELD ROAD

LEGEND

- CADASTRAL BOUNDARIES
- PROPOSED DEVELOPMENT BOUNDARY
- HV — EXISTING HV DUCTS
- LV — EXISTING LV DUCTS
- G — EXISTING GAS
- CH — EXISTING CHORUS
- FO — EXISTING FIBRE OPTICS
- PP — EXISTING POWER POLE
- W — EXISTING WATERMAIN
- H — EXISTING WATER HYDRANT
- EXISTING WATER VALVE
- WMB — EXISTING WATER METER BANK
- WM — EXISTING WATER METER
- EXISTING WASTEWATER
- EXISTING WASTEWATER MH

VIEW 1
1:250
SCALE 1:250

SCALE 1:1500

Filename: C:\USERS\MAX.KORW\DACDOCS\AURECON\510611 - DRURY CENTRE PROJECT\101 AURECON\3. DELIVER\DESIGN\03 DRAWING_WORKING\RENDITIONS_BULK EARTHWORK CONSENT_CAD FILES\0611\0100\DRG\UT-0030.DWG
Plot Date: 2021-10-29 09:23:27
Office: NZCHC

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www.aurecongroup.com

CLIENT
Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	21.05.21	ISSUED FOR RESOURCE CONSENT	W.NEL
B	29.10.21	ISSUED FOR CONSENT	W.NEL

SCALE	SIZE
AS SHOWN	A1

DRAWN: M.KAUR
DESIGNED: J.CORSIGA
REVIEWED: J.A.VORSTER

FOR CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE: 29.10.2021
W.NEL

PROJECT: KIWI PROPERTY - DRURY

TITLE: EXISTING UTILITIES LAYOUT PLAN

DRAWING No. | PROJECT No. | WBS | TYPE | DISC | NUMBER | REV
510611 – 0100 – DRG – UT – 0030 – B

Appendix B
Ross Reid Survey - May 2023