A.S.JAMES PTY. LTD.

A.C.N.004 584 534 A.B.N. 40 004 584 534

Geotechnical Engineers

SINCE 1963

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Pipecon Pty Ltd
48 Icon Drive
DELACOMBE VIC 3356

Date: 18/5/2020

Ref : 120208 B023

Marked attention to. Jayson Frawley

Purchase Order No :

RE: Shortridge Drive
Lucas

We enclose Reports 120208 B019, B021 & B023 being results of field and laboratory testing, along with level one superv carried out on the above project between 11/5/2020 and 13/5/2020

Our Invoice is also enclosed.

Yours faithfully,

T.J. HOLT MIEAust CPEng
NER APEC Eng IntPE (Aus) EC-1022
A.S. JAMES PTY LTD

A.S. JAMES PTY.LTD **Geotechnical Engineers** **Ballarat Facility** **P.O. Box 1319 Bakery Hill Vic.**	**JOB:** Shortridge Drive Lucas	**Job No.** 120208 **Report No.** B019 **Date** 18-May-20

Section Tested: House Lot Fill

FOR
Pipecon Pty Ltd
48 Icon Drive
DELACOMBE VIC 3356

Test Number		82					
Date of Test		11/05/20					
Time of Test		14:17					
Location	Chainage:	See					
	Offset:	Sketch					
Depth of Test		600					
Probe Depth (mm)		300					
Material Type		Silty CLAY, Gravelly					
Maximum Converted Wet Density (t/m3)		2.06					
Optimum Moisture Content (%)		21.5					
Field Wet Density (t/m3)		2.13					
Field Dry Density (t/m3)		1.74					
Field Moisture Content (%)		22.5					
Oversize Material (%)		3					
Compaction Type		Standard					
Oversize Retained on :		19mm					
Moisture Ratio (%)		104.5					
Moisture Variation (%)		1.0					
Wet/Dry of Optimum		Wet					
Hilf Density Ratio		**103.0**					

Notes: DEPTH OF TESTS TAKEN FROM BELOW FINISHED FILL LEVEL

NATA

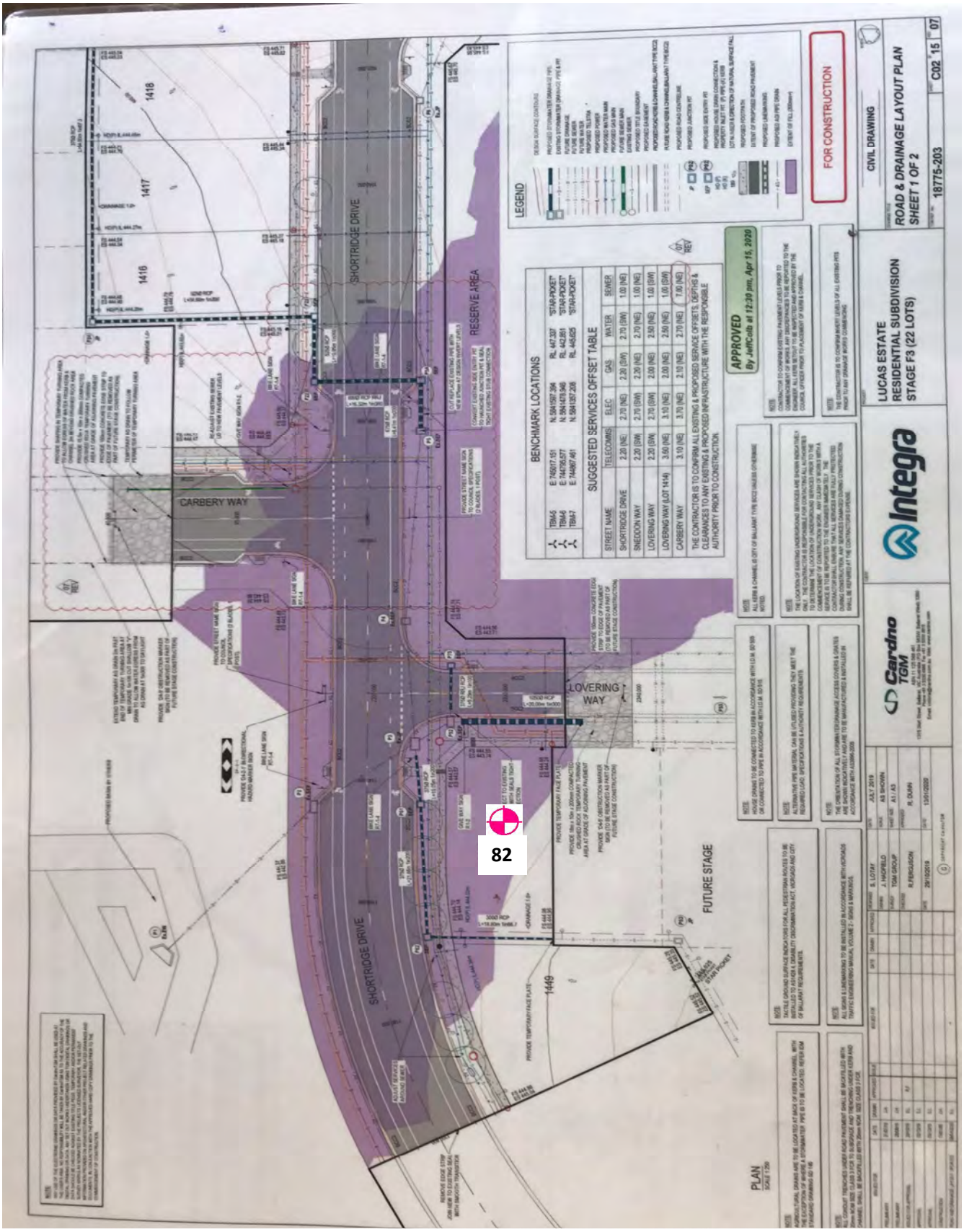
Accredited for compliance with ISO/IEC 17025 - Testing
Accreditation No 9855

Approved Signatory
H.Pyke

18-May-20

HILF DENSITY/MOISTURE RATIO, NUCLEAR GAUGE METHOD AS PER AS1289 - 1.1, 1.2.1(6.4),2.1.1,5.7.1,5.8.1 A.S.JAMES FORM No: LR005 FIG 1 / REV 9 / 10/01/17	TESTED BY : CHECKED BY:	J.Murphy A.White	FIGURE 1 of 2

A.S. JAMES PTY.LTD Geotechnical Engineers Ballarat Facility P.O. Box 1319 Bakery Hill Vic. Accreditation No 9855	JOB: Shortridge Drive Lucas	Job No. 120208 Report No. B019 Date 18-May-20



TEST LOCATIONS
DISTANCES GIVEN IN METRES

N.T.S

HILF DENSITY/MOISTURE RATIO, NUCLEAR GAUGE METHOD AS PER AS1289 - 1.1, 1.2.1(6.4),2.1.1,5.7.1,5.8.1 A.S.JAMES FORM No: LR005 FIG 3 / REV 3 / 30/01/03	TESTED BY : J.Murphy CHECKED BY: A.White	FIGURE 2 of 2

A.S. JAMES PTY. LTD. Geotechnical Engineers Ballarat Laboratory Reg No.-9855	JOB: Shortridge Drive Lucas	JOB No: 120208 REPORT No: B019/1 DATE: 18/05/2020

DAILY GEOTECHNICAL ACTIVITY REPORT

On Site :- 14:00 Off Site : 14:30

Developer :	Constructor: Pipecon	Superintendent: Shaun
Testing Authority: A.S.James Pty Ltd	Level of GTA brief:	Level one Supervision by Testing Authority
Weather Conditions: Sunny, windy		

Equipment on Site	In Use	Not in Use		In Use	Not in Use
Excavator	√		Water cart (small)	√	
Pad Foot vibrating roller	√		D6 Dozer		
815 Compactor	√		Dump Truck (On Site)	√	
Grader		√	Scraper		

Works in progress

	Location
Stripping	
Excavating	
Filling	House Lot
Rolling	House Lot

Comments, Details & Observations:

The constructor has placed the first layer of material on house lot 1414. One test was carried out on this lot. Material appears well compacted and well moisture conditioned. The constructor was given approval to place the next layer.

Inspections

Inspection Type & Location:

Visual Inspection - House Lot 1414

Comments & Details:

The constructor has excavated a test pit on house lot 1414. The constructor has exposed the natural silty clay subgrade in this pit. It appears as though the constructor has removed the majority of the silt/topsoil and exposed the underlying natural clay, however the exposed base was not inspected prior to commencement of fill placement.

Material Type / Quality / Source / Approval:

Site won material - CLAY, Silty, Gravelly, contains some oversize rocks

Compaction Testing:

Numbers performed	1	Test No.s	82	Location	House Lot Fill
Numbers performed		Test No.s		Location	
Numbers performed		Test No.s		Location	

Specification Requirements

Standard / Modified		Density Ratio (%)	95
	STD	Moisture Ratio (%)	85-115

Compliance to Specification

	Conforming Tests	Non Conforming Tests
Density	82	
Moisture	82	

Site Instructions Given (Tick box)

Approval to Place Fill [√] Filling Methods Approved [√] Rework / Re-roll required [ ]

Stripped surface ~~Not~~ / Approved [√] Filled Area Under Review [ ] Moisture Conditioning required [ ]

Comments & Details

Level 1 supervision daily geotechnical report summary A.S.JAMES LW053 (Fig 2) / REV 1 / 21/5/14	Operator: J.Murphy Date: 11/5/2020

A.S. JAMES PTY.LTD Geotechnical Engineers Ballarat Laboratory 73-77 Humffray Street North Accreditation No. 9855	JOB: Shortridge Drive Lucas	Job No. 120208 Report No. B019/1 Date 18-May-20

Lot 1414 test pit

N.T.S

Site Location Plan	TESTED BY : J.Murphy CHECKED BY: A.White	FIGURE 2

A.S. JAMES PTY.LTD **Geotechnical Engineers** **Ballarat Facility** **P.O. Box 1319 Bakery Hill Vic.**	**JOB:** Shortridge Drive Lucas	**Job No.** 120208 **Report No.** B021 **Date** 18-May-20

Section Tested: House Lot Fill

FOR
Pipecon Pty Ltd
48 Icon Drive
DELACOMBE VIC 3356

Test Number		87					
Date of Test		12/05/20					
Time of Test		14:12					
Location	Chainage:	See					
	Offset:	Sketch					
Depth of Test		300					
Probe Depth (mm)		300					
Material Type		Silty CLAY, Gravelly					
Maximum Converted Wet Density (t/m3)		2.07					
Optimum Moisture Content (%)		21.5					
Field Wet Density (t/m3)		1.99					
Field Dry Density (t/m3)		1.64					
Field Moisture Content (%)		21.5					
Oversize Material (%)		0					
Compaction Type		Standard					
Oversize Retained on :		19mm					
Moisture Ratio (%)		98.5					
Moisture Variation (%)		0.5					
Wet/Dry of Optimum		Dry					
Hilf Density Ratio		**96.0**					

Notes: DEPTH OF TESTS TAKEN FROM BELOW FINISHED FILL LEVEL

NATA

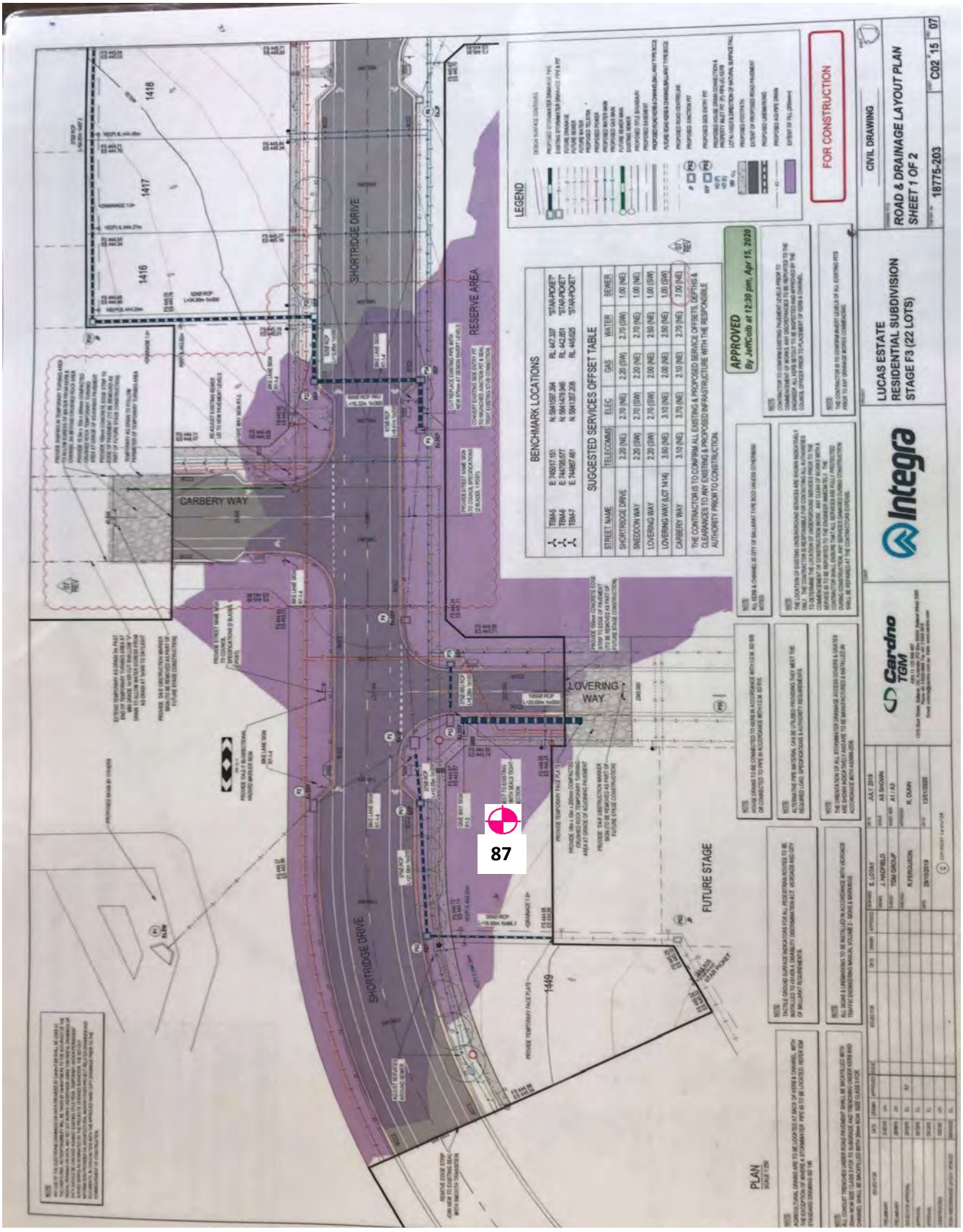
Accredited for compliance with ISO/IEC 17025 - Testing
Accreditation No 9855

Approved Signatory
H.Pyke

18-May-20

HILF DENSITY/MOISTURE RATIO, NUCLEAR GAUGE METHOD AS PER AS1289 - 1.1, 1.2.1(6.4),2.1.1,5.7.1,5.8.1 A.S.JAMES FORM No: LR005 FIG 1 / REV 9 / 10/01/17	TESTED BY : CHECKED BY:	J.Murphy A.White	FIGURE 1 of 2

A.S. JAMES PTY.LTD Geotechnical Engineers Ballarat Facility P.O. Box 1319 Bakery Hill Vic. Accreditation No 9855	JOB: Shortridge Drive Lucas	Job No. 120208 Report No. B021 Date 18-May-20



TEST LOCATIONS
DISTANCES GIVEN IN METRES

N.T.S

HILF DENSITY/MOISTURE RATIO, NUCLEAR GAUGE METHOD	TESTED BY :	J.Murphy	FIGURE
AS PER AS1289 - 1.1, 1.2.1(6.4),2.1.1,5.7.1,5.8.1			
A.S.JAMES FORM No: LR005 FIG 3 / REV 3 / 30/01/03	CHECKED BY:	A.White	2 of 2

A.S. JAMES PTY. LTD. Geotechnical Engineers Ballarat Laboratory Reg No.-9855	JOB: Shortridge Drive Lucas	JOB No: 120208 REPORT No: B021/1 DATE: 18/05/2020

DAILY GEOTECHNICAL ACTIVITY REPORT

On Site :- 13:45 Off Site : 14:15

Developer :	Constructor: Pipecon	Superintendent: Shaun
Testing Authority: A.S.James Pty Ltd	Level of GTA brief:	Level one Supervision by Testing Authority
Weather Conditions: Sunny, windy		

Equipment on Site	In Use	Not in Use		In Use	Not in Use
Excavator	√		Water cart (small)	√	
Pad Foot vibrating roller	√		D6 Dozer		
815 Compactor	√		Dump Truck (On Site)	√	
Grader	√		Scraper		

Works in progress

	Location
Stripping	
Excavating	
Filling	House Lot
Rolling	House Lot

Comments, Details & Observations:

The constructor has placed the next layer of material on house lot 1414. One test was carried out on this lot. Material appears well compacted and well moisture conditioned. The constructor was given approval to place the next layer.

Inspections

Inspection Type & Location:

Comments & Details:

Material Type / Quality / Source / Approval:

Site won material - CLAY, Silty, Gravelly, contains some oversize rocks

Compaction Testing:

Numbers performed	1	Test No.s	87	Location	House Lot Fill
Numbers performed		Test No.s		Location	
Numbers performed		Test No.s		Location	

Specification Requirements	Standard / Modified	Density Ratio (%)	95
	STD	Moisture Ratio (%)	85-115

Compliance to Specification

	Conforming Tests	Non Conforming Tests
Density	87	
Moisture	87	

Site Instructions Given (Tick box)

Approval to Place Fill [√] Filling Methods Approved [√] Rework / Re-roll required [ ]

Stripped surface ~~Not~~ / Approved [√] Filled Area Under Review [ ] Moisture Conditioning required [ ]

Comments & Details

Level 1 supervision daily geotechnical report summary A.S.JAMES LW053 (Fig 2) / REV 1 / 21/5/14	Operator: J.Murphy Date: 12/5/2020

A.S. JAMES PTY.LTD **Geotechnical Engineers** **Ballarat Laboratory** **73-77 Humffray Street North** **Accreditation No. 9855**	**JOB:** Shortridge Drive Lucas	**Job No.** 120208 **Report No.** B021/1 **Date** 18-May-20

Lot 1414 test pad

N.T.S

Site Location Plan	TESTED BY : J.Murphy CHECKED BY: A.White	FIGURE 2

A.S. JAMES PTY.LTD **Geotechnical Engineers** **Ballarat Facility** **P.O. Box 1319 Bakery Hill Vic.**	**JOB:** Shortridge Drive Lucas	**Job No.** 120208 **Report No.** B023 **Date** 18-May-20

Section Tested: House Lot Fill

FOR
Pipecon Pty Ltd
48 Icon Drive
DELACOMBE VIC 3356

Test Number		92	93	94	95	96	
Date of Test		13/05/20	13/05/20	13/05/20	13/05/20	13/05/20	
Time of Test		14:39	15:03	15:05	15:07	15:09	
Location	Chainage:	See	See	See	See	See	
	Offset:	Sketch	Sketch	Sketch	Sketch	Sketch	
Depth of Test		FFL	FFL	FFL	FFL	FFL	
Probe Depth (mm)		300	300	300	300	300	
Material Type		Silty CLAY, Gravelly	Silty CLAY, Gravelly	Silty CLAY, Gravelly	Silty CLAY, Gravelly	Silty CLAY, Gravelly	
Maximum Converted Wet Density (t/m3)		2.02	2.00	2.04	2.05	2.08	
Optimum Moisture Content (%)		25.0	25.0	27.0	23.5	21.5	
Field Wet Density (t/m3)		2.07	2.03	2.09	2.14	2.13	
Field Dry Density (t/m3)		1.64	1.60	1.65	1.73	1.74	
Field Moisture Content (%)		26.0	27.0	27.0	24.0	22.0	
Oversize Material (%)		2	0	2	0	0	
Compaction Type		Standard	Standard	Standard	Standard	Standard	
Oversize Retained on :		19mm	19mm	19mm	19mm	19mm	
Moisture Ratio (%)		104.0	109.0	100.5	101.5	101.0	
Moisture Variation (%)		1.0	2.0	0.0	0.5	0.0	
Wet/Dry of Optimum		Wet	Wet	Wet	Wet	Wet	
Hilf Density Ratio		**102.0**	**101.5**	**103.0**	**104.5**	**102.0**	

Notes: DEPTH OF TESTS TAKEN FROM FINISHED FILL LEVEL

NATA

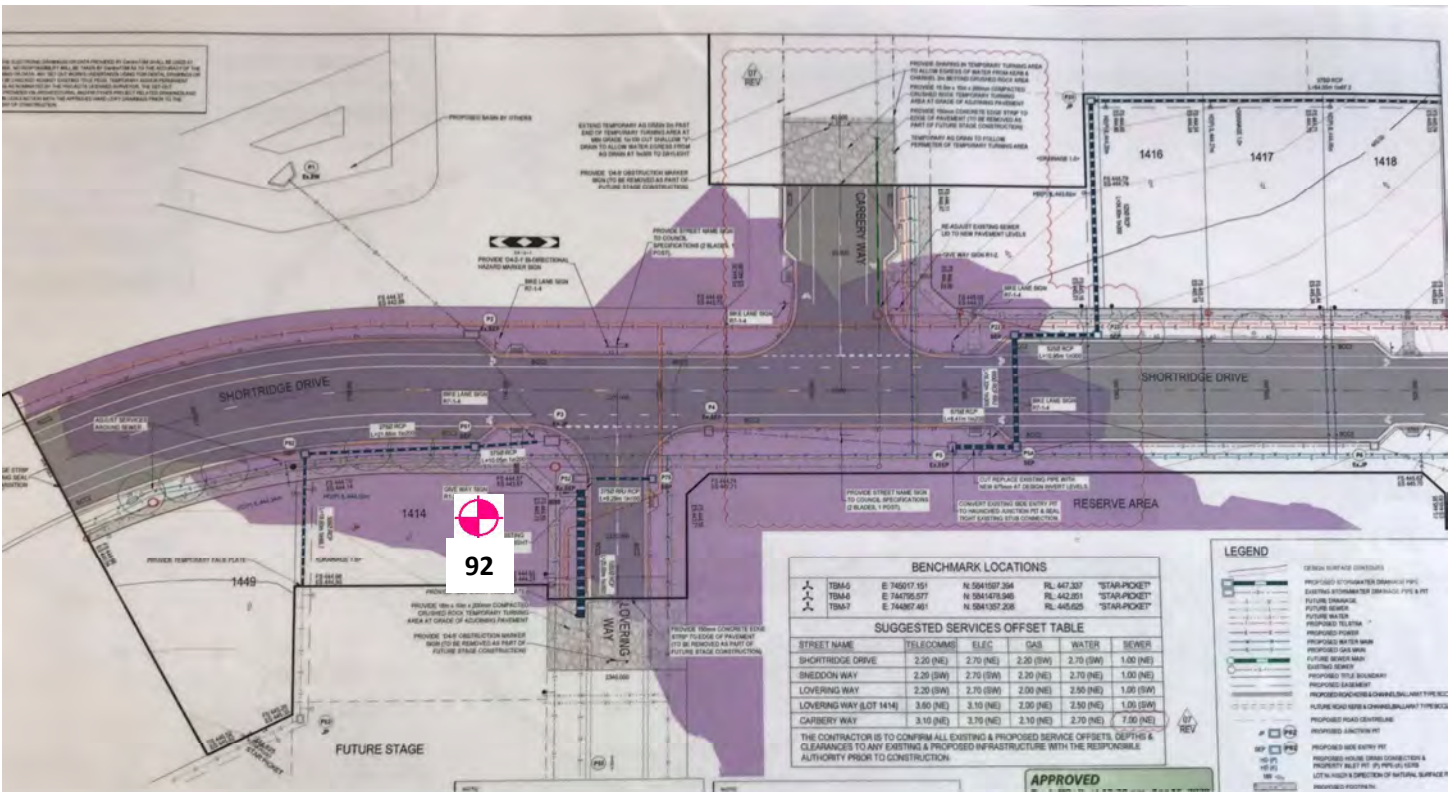
Accredited for compliance with ISO/IEC 17025 - Testing
Accreditation No 9855

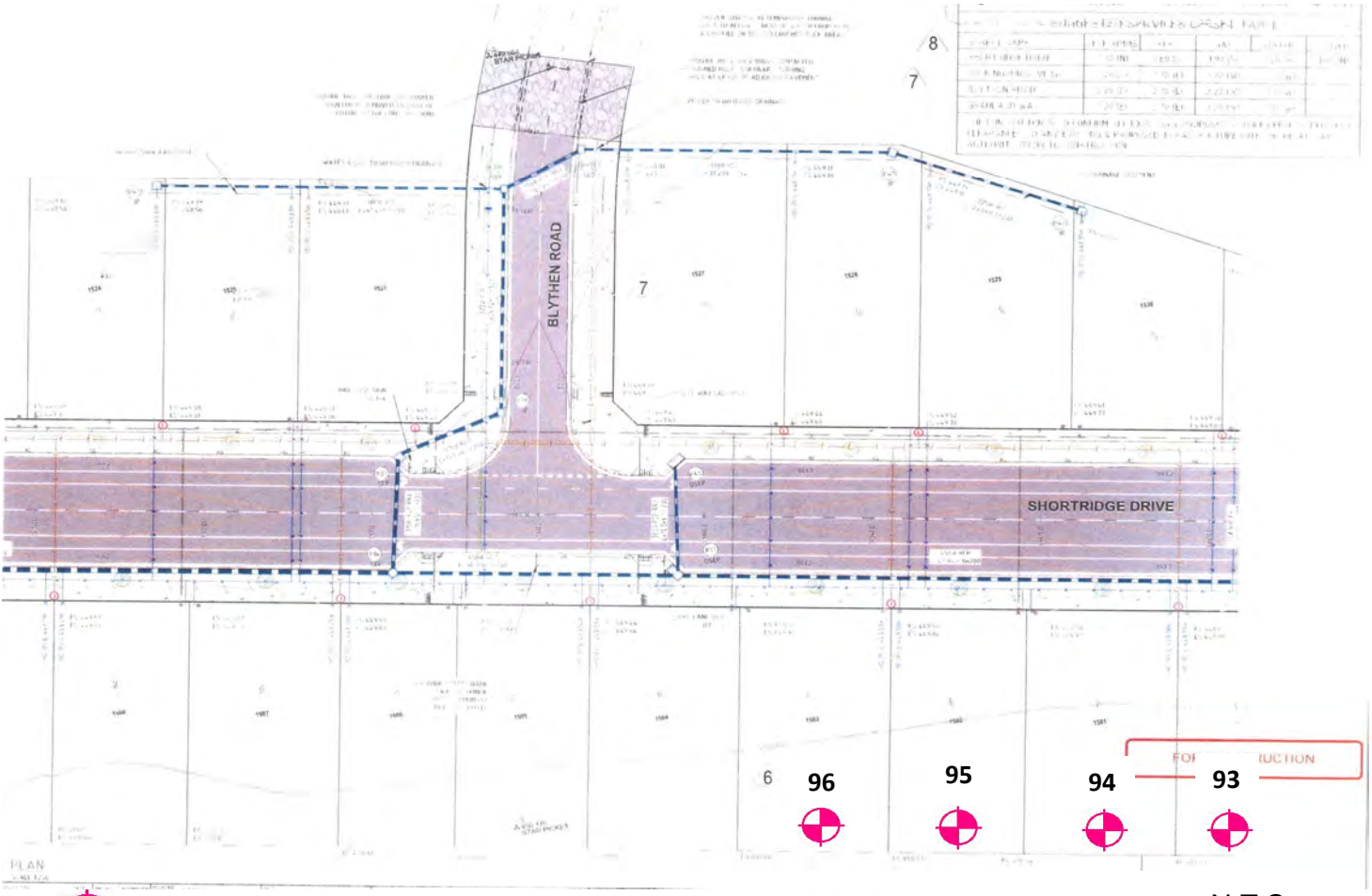
Approved Signatory
H.Pyke

18-May-20

HILF DENSITY/MOISTURE RATIO, NUCLEAR GAUGE METHOD AS PER AS1289 - 1.1, 1.2.1(6.4),2.1.1,5.7.1,5.8.1 A.S.JAMES FORM No: LR005 FIG 1 / REV 9 / 10/01/17	TESTED BY : CHECKED BY:	J.Murphy A.White	FIGURE 1 of 2

A.S. JAMES PTY.LTD Geotechnical Engineers Ballarat Facility P.O. Box 1319 Bakery Hill Vic. Accreditation No 9855	JOB: Shortridge Drive Lucas	Job No. 120208 Report No. B023 Date 18-May-20





TEST LOCATIONS
DISTANCES GIVEN IN METRES

N.T.S

HILF DENSITY/MOISTURE RATIO, NUCLEAR GAUGE METHOD AS PER AS1289 - 1.1, 1.2.1(6.4),2.1.1,5.7.1,5.8.1 A.S.JAMES FORM No: LR005 FIG 3 / REV 3 / 30/01/03	TESTED BY : J.Murphy CHECKED BY: A.White	FIGURE 2 of 2

A.S. JAMES PTY. LTD. Geotechnical Engineers Ballarat Laboratory Reg No.-9855	JOB: Shortridge Drive Lucas	JOB No: 120208 REPORT No: B023/1 DATE: 18/05/2020

DAILY GEOTECHNICAL ACTIVITY REPORT

On Site :- 14:00 Off Site : 15:30

Developer :	Constructor: Pipecon	Superintendent: Shaun
Testing Authority: A.S.James Pty Ltd	Level of GTA brief:	Level one Supervision by Testing Authority
Weather Conditions: Sunny, windy		

Equipment on Site	In Use	Not in Use		In Use	Not in Use
Excavator	√		Water cart (small)		√
Pad Foot vibrating roller	√		D6 Dozer		
815 Compactor	√		Dump Truck (On Site)	√	
Grader	√		Scraper		

Works in progress

	Location
Stripping	
Excavating	
Filling	House Lot
Rolling	House Lot

Comments, Details & Observations:

The constructor has placed the final layer of material on house lot 1414. One test was carried out on this lot. Material appears well compacted and well moisture conditioned.
Testing was also carried out at finished fill level on lots 1500-1503. One test was taken on each lot with material appearing well moisture conditioned and well compacted.

Inspections

Inspection Type & Location:

Visual Inspection - Subgrade on lots 1500, 1501, 1502 & 1503

Comments & Details:

The constructor has excavated some test pits spread evenly across lots 1500-1503. The constructor has exposed the natural clay subgrade on each test pit. From the test pits excavated it appears as though the constructor has removed the majority of the topsoil/silt and exposed the suitable stiff underlying natural clay, however the exposed base was not inspected prior to commencement of filling works.

Material Type / Quality / Source / Approval:

Site won material - CLAY, Silty, Gravelly, contains some oversize rocks

Compaction Testing:

Numbers performed	5	Test No.s	92-96	Location	House Lot Fill
Numbers performed		Test No.s		Location	
Numbers performed		Test No.s		Location	

Specification Requirements

Standard / Modified		Density Ratio (%)	95
	STD	Moisture Ratio (%)	85-115

Compliance to Specification

	Conforming Tests	Non Conforming Tests
Density	92,93,94,95,96	
Moisture	92,93,94,95,96	

Site Instructions Given (Tick box)

Approval to Place Fill [√] Filling Methods Approved [√] Rework / Re-roll required [ ]
Stripped surface ~~Not~~ / Approved [√] Filled Area Under Review [ ] Moisture Conditioning required [ ]

Comments & Details

Level 1 supervision daily geotechnical report summary A.S.JAMES LW053 (Fig 2) / REV 1 / 21/5/14	Operator: J.Murphy/H.Pyke Date: 13/5/2020

A.S. JAMES PTY.LTD Geotechnical Engineers Ballarat Laboratory 73-77 Humffray Street North Accreditation No. 9855	JOB: Shortridge Drive Lucas	Job No. 120208 Report No. B023/1 Date 18-May-20

Lot 1500 test pit

Lot 1501 test pit

Lot 1502 test pit

Lot 1503 test pit

Site Location Plan	TESTED BY : J.Murphy/H.Pyke CHECKED BY: A.White	FIGURE 2