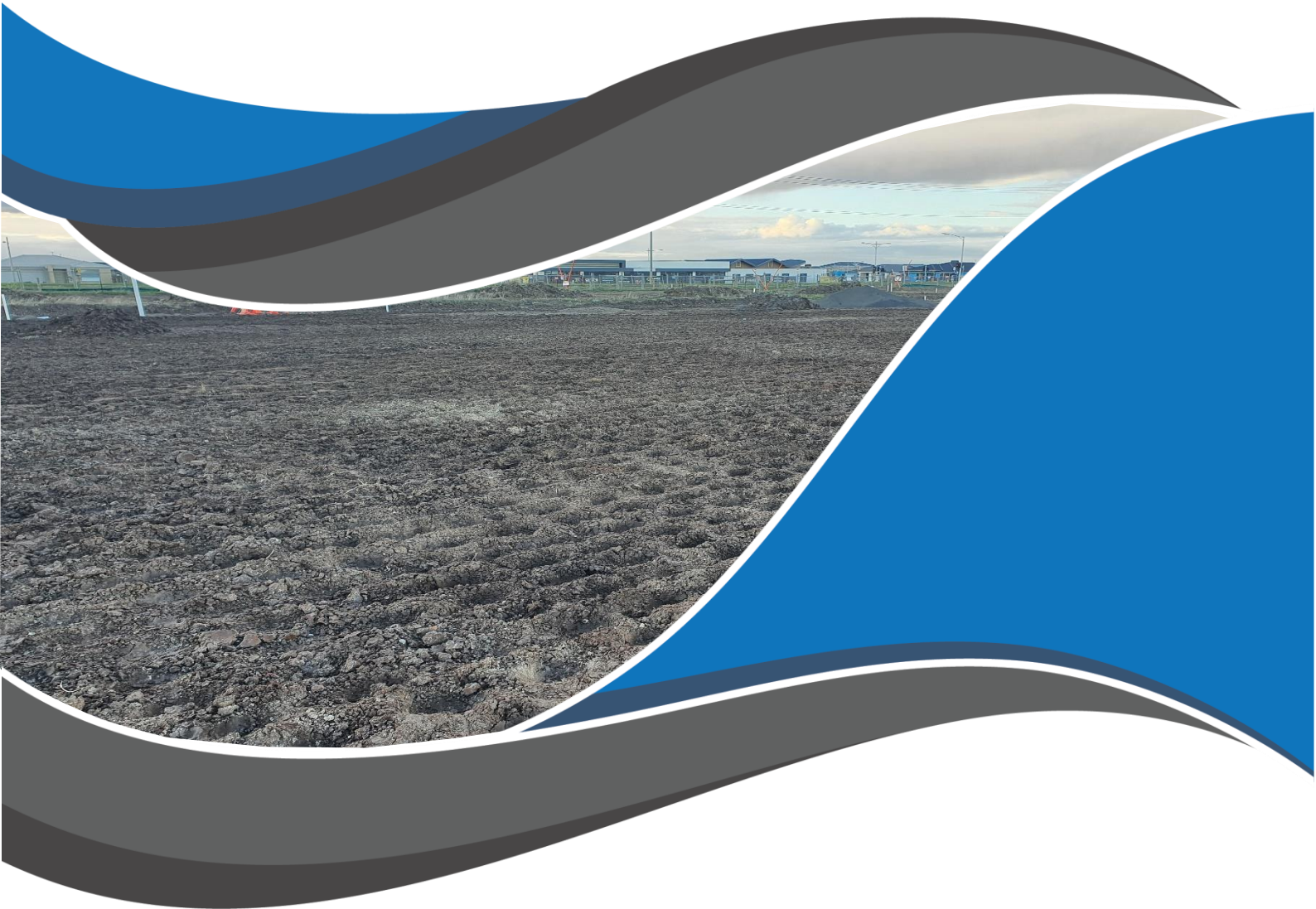


# Newhaven Estate - Stage 13, Tarneit

## Level 1 Inspection & Testing Report

Reference: 1120 0259-1



### Prepared for:

BMD Urban

December 2021



**A&Y ASSOCIATES**  
GEOTECHNICAL ENGINEERING CONSULTANTS

# Document Control Record

Prepared by:

**A&Y Associates Pty Ltd**

ABN 92 614 244 665

5/16 Network Drive

Truganina, VIC 3029

**T:** (03) 8754 8325

**E:** info@ayassociates.com.au

**W:** www.ayassociates.com.au

## Document control

<b>Report title</b>	Level 1 Inspection & Testing				
<b>Project reference number</b>	1120 0259-1				
<b>Client</b>	BMD Urban				
<b>Contact name</b>	Mark Martino				
<b>Contact number</b>	0400 846 438				
<b>Contact e-mail</b>	Mark.Martino@bmd.com.au				
<b>Revision</b>	<b>Date</b>	<b>Descriptions/Status</b>	<b>Author</b>	<b>Reviewer</b>	<b>Approver</b>
0	08/12/2021	Final	B Mu	A Tan	A Tan

## Approver



Alvin Tan

(BE Civil and Infrastructure), MIEAust

Senior Geotechnical Engineer

E: alvin@ayassociates.com.au | M: 0449 288 338



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## **Disclaimer**

The findings and conclusions contained in this report are made based on site conditions that existed at the time this work was conducted. The conclusions present in this report are relevant to the conditions of the site and the state of legislation currently enacted as at the date of this report.

Findings and conclusions are made assuming that the soil, groundwater, geological and chemical conditions detailed within this report are accurate and remain applicable to the site at the time of writing. No other warranties are made or intended.

A&Y Associates (A&Y) Pty Ltd has used a degree of skill and care ordinarily exercised by reputable members of our profession practicing in the same or similar locality.

A&Y does not make any representation or warranty that the conclusions in this report will be applicable in the future as there may be changes in the condition of the site, applicable legislation or other factors that would affect the conclusions contained in this report.

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## 1 Introduction

This report presents the results of the Level 1 Inspection and Testing for the construction of the fill platforms located in Newhaven Estate - Stage 13, Tarneit.

## 2 Project Summary

It is understood that BMD Urban require the fill platforms within Newhaven Estate - Stage 13, Tarneit to be constructed under Level 1 Inspection and Testing undertaken by a Geotechnical Inspection and Testing Authority (GITA).

Level 1 Inspection and Testing, as defined in AS3798-2007 "Guidelines on Earthworks for Commercial and Residential Development," provides for full time inspection of the construction of controlled fill and field and laboratory testing in accordance with AS1289 "Methods of Testing Soils for Engineering Purposes".

The Level 1 inspection was undertaken by a Geotechnician from A&Y Associates over a period of 9 working days from **1<sup>st</sup> July 2021 to 14<sup>th</sup> July 2021**.

This report is applicable for fill placed by BMD Urban for the following lots located in Newhaven Estate - Stage 13, Tarneit, as shown in Appendix A – Site Plan.

- Lot 1301 to Lot 1339

---

### 3 Project Specifications

No specification has been provided for the construction works in Newhaven Estate - Stage 13, Tarneit. However, based on drawing (ref: 303445CR100-Rev0 prepared by PEET NO. 1895 PTY LTD) all filling on lots and within road reserves greater than 200mm is to be undertaken under level 1 supervision in accordance with AS3798. The supervision and inspections were performed based on AS3798. A short summary of the requirements outline in AS3798 is provided below:

- Material to be used for fill construction shall satisfy the requirements of AS3798-2007 "Guidelines on Earthworks for Commercial and Residential Developments". Material used shall be free of:
  - Organic soils, such as topsoils, severely root affected subsoil and peat;
  - Contaminated soils;
  - Materials which undergo volume change or loss of strength when disturbed and exposed to moisture;
  - Silts, or materials that have deleterious engineering properties of silt;
  - Fill that contains wood, metal, plastic, boulders, or other deleterious material, in sufficient proportions to affect the required performance of fill;
  - The maximum particle size of any rocks or other lump, within the layer, has not exceeded two-thirds (2/3) of the compacted layer thickness.
- Compaction to achieve a dry density ratio of at least 95% Standard, as the project was classified as **Residential**.

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## **4 Subgrade Assessment**

The subgrade was assessed by A&Y Associates following the topsoil removal and before any fill was placed. The subgrade assessment was undertaken on the **1<sup>st</sup> July 2021, 5<sup>th</sup> July 2021 and 12<sup>th</sup> July 2021** as mentioned in report *1120 0259-1 (SS11)*.

The exposed subgrade material comprised natural silty clay. No wet or soft patches were found during the inspection. No evidence of deleterious material was found during the inspection.

## **5 Earthworks**

The earthworks for this project included stripping of topsoil, removing of tree roots, proof rolling the subgrade and placement and compaction of fill to construct engineered platforms.

Based on design plans and site inspection, it appears that the fill thickness placed is approximately 200mm to 400mm. The fill layers or thickness nominated in this report are provided as a guide on the amounts of fill placed and do not necessarily reflect an accurate survey of the fill levels.

## **6 Fill Material**

The fill material used for the platform consisted of site derived material. The material was predominantly comprising of Silty Clay.

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## **7 Testing**

Field density testing was undertaken on the compacted fill at a frequency of a minimum of 3 tests per lot (AS3798 Table 8.1).

Tests were performed using a Nuclear Density Gauge for field density determination as per AS 1289.5.8.1. Testing was completed at a minimum rate of 3 field density tests per day's production based on the minimum requirements of AS 3798-2007 and taken from each layer of fill placed.

A total of 30 field density tests were performed during the earthworks. All of the test results met the specified compaction requirement of 95% Standard Compaction.

The locations of the 30 field density tests are shown in Appendix B – Test Locations. A summary of the test results obtained from the field density testing is presented in Appendix C – Test Results Summary. The laboratory test reports of the field density tests are presented in Appendix D – NATA Test Results.

## **8 Finish Surface Levels**

It should be noted that even though the final fill layer meets the specification requirements, over time, the material may be subject to adverse weather conditions resulting in either surface softening or drying and cracking. The top 200mm – 300mm of the fill will deteriorate with time and should be considered by the foundation engineer.

---

## 9 Exclusion

A&Y Associates was not involved in monitoring and testing the following works and as such are not included in the Level 1 report.

- Any trenches excavated and backfilled on site for the installation of underground services such as sewers, electrical conduits, water mains etc.
- Footpaths in front of the lots that may be excavated and filled after the Level 1 supervision conducted by A&Y Associates.
- Uncontrolled fill and topsoil that may have been placed as part of the landscaping of the site following the completion of the engineered fill construction.

## 10 Conclusion

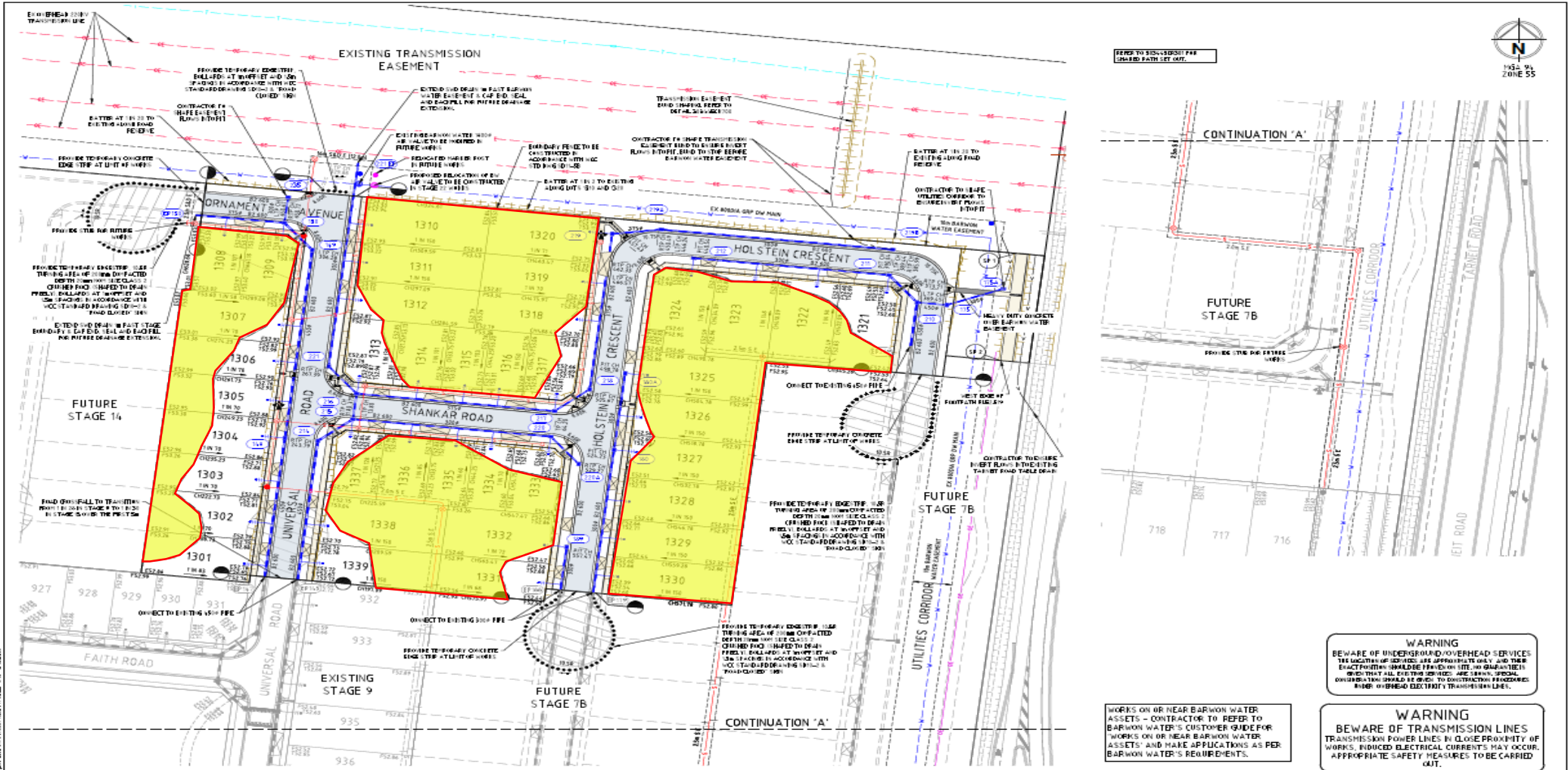
On the completion of the earthworks and after analysing the materials used, it has been concluded that the filling procedure conducted by BMD Urban appears to be consistent with the requirements of AS 3798 in regards to the placement of fill materials on a project under Level 1 Supervision and in accordance with the project specification as provided to A&Y Associates.

---

# **Appendix A - Site Plan**



Area Inspected and Tested



REFER TO SUB-DRAWING FOR CHANGED PATHS ETC.



CONTINUATION 'A'

FUTURE STAGE 7B

FUTURE STAGE 7B

**WARNING**  
BEWARE OF UNDERGROUND/OVERHEAD SERVICES THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE VERIFIED ON SITE. NO GUARANTEES ARE MADE THAT ALL EXISTING SERVICES ARE SHOWN. SPECIAL CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES BASED ON THESE EXISTING UTILITIES.

WORKS ON OR NEAR BARROW WATER ASSETS - CONTRACTOR TO REFER TO BARROW WATER'S CUSTOMER GUIDE FOR WORKS ON OR NEAR BARROW WATER ASSETS AND MAKE APPLICATIONS AS PER BARROW WATER'S REQUIREMENTS.

**WARNING**  
BEWARE OF TRANSMISSION LINES TRANSMISSION POWER LINES IN CLOSE PROXIMITY OF WORKS. INDICED ELECTRICAL CURRENTS MAY OCCUR. APPROPRIATE SAFETY MEASURES TO BE CARRIED OUT.

Rev	Description	Approved	Date
0	ISSUED FOR CONSTRUCTION	M.H.	07/04/21
1	ISSUED FOR TENDER	M.H.	31/03/21
2	STAGE 9 TRANSMISSION EASEMENT BOUND ADDED	M.H.	22/03/21
3	ISSUED FOR APPROVAL	M.H.	05/03/21
4	Amendments		



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**PEET**  
Designed: P. CLIFTON  
Authorised: M. HOLMES  
Checked: J. KOEHLER  
Date: 05/03/21

**NEWHAVEN STAGE 13**  
ROAD AND DRAINAGE  
FACE PLAN  
WYNCHAMPS CITY COUNCIL  
PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR200 0

**PROJECT:**  
Newhaven Estate - Stage 13 (Level 1)

**LOCATION:**  
Tarneit

**CLIENT:**  
BMD Urban

**PROJECT No:**  
1120 0259-1

**SITE PLAN SKETCH—NOT TO SCALE**

**A&Y ASSOCIATES**  
GEOTECHNICAL ENGINEERING CONSULTANTS

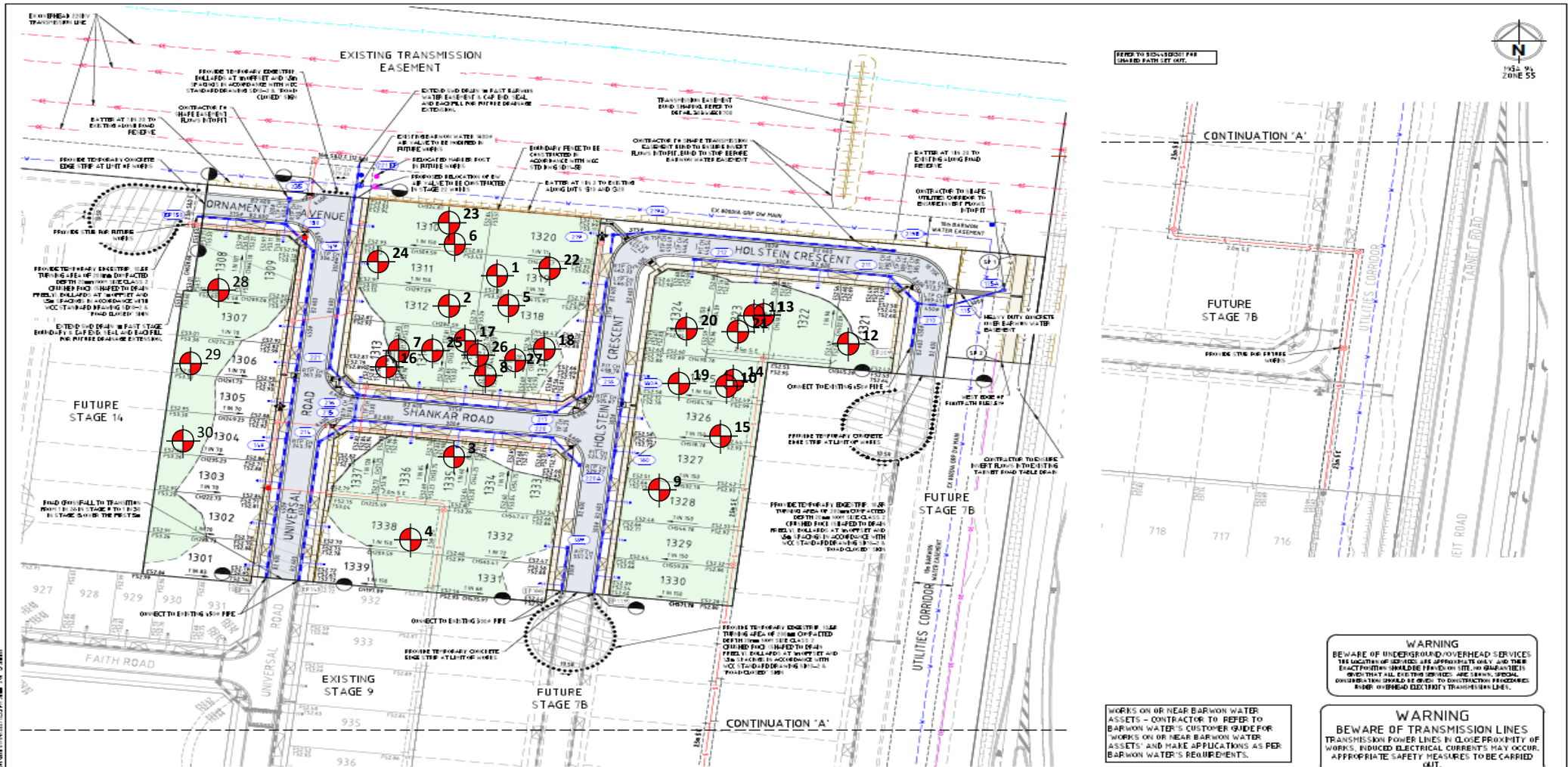


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## **Appendix B – Test Locations**



Indicative Test Location



REFER TO SUB-DRAWING FOR CHANGED PATH SET OUT.

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REVISIONS: 1. 05/03/21: ISSUED FOR APPROVAL. 2. 05/03/21: ISSUED FOR TENDER. 3. 05/03/21: ISSUED FOR CONSTRUCTION.

Rev	Description	Approved	Date
1	ISSUED FOR APPROVAL	M.H.	05/03/21
2	ISSUED FOR TENDER	M.H.	05/03/21
3	ISSUED FOR CONSTRUCTION	M.H.	05/03/21



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Authorised: M. HOLMES  
Checked: J. KOEHLER  
Date: 05/03/21

**NEWHAVEN STAGE 13**  
ROAD AND DRAINAGE  
FACE PLAN  
WYNCHAMPTON CITY COUNCIL  
PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR200 0

**PROJECT:**  
Newhaven Estate - Stage 13 (Level 1)

**LOCATION:**  
Tarneit

**CLIENT:**  
BMD Urban

**PROJECT No.:**  
1120 0259-1


SITE PLAN SKETCH—NOT TO SCALE



---

# **Appendix C – Test Results Summary**

Project No		1120 0259-1			Client	BMD Urban				
Project Name		Newhaven Estate - Stage 13, Tarneit (Level 1)			Specification			Density Ratio $\geq$ 95% of Peak Wet Density		
Location		Tarneit								
Test No	Retest of Test	Date	Location	Layer	Oversize	Density Ratio	Moisture Ratio	Moisture Variation	Pass / Fail	Retest
#	#		Lot #	#	%	%	%	%		Pass / Fail
1	-	1/07/2021	-	1	4.0	95.5	90.0	-3.0	Pass	-
2	-	1/07/2021	-	1	3.6	95.5	89.0	-2.5	Pass	-
3	-	1/07/2021	-	1	4.3	95.5	89.0	-3.0	Pass	-
4	-	2/07/2021	-	1	2.9	95.5	89.5	-2.5	Pass	-
5	-	2/07/2021	-	1	3.5	96.0	89.0	-2.5	Pass	-
6	-	2/07/2021	-	1	3.0	95.0	90.0	-2.5	Pass	-
7	-	5/07/2021	-	1	0.0	95.5	91.0	-2.5	Pass	-
8	-	5/07/2021	-	1	0.0	95.5	90.5	-3.0	Pass	-
9	-	5/07/2021	-	1	0.0	96.0	90.0	-3.0	Pass	-
10	-	6/07/2021	-	1	0.0	95.5	89.0	-3.0	Pass	-
11	-	6/07/2021	-	1	0.0	96.0	89.5	-3.0	Pass	-
12	-	6/07/2021	-	1	0.0	95.0	89.0	-2.5	Pass	-
13	-	7/07/2021	-	2	0.0	96.5	87.0	-2.5	Pass	-
14	-	7/07/2021	-	2	0.0	95.5	90.0	-3.0	Pass	-
15	-	7/07/2021	-	2	0.0	95.0	90.0	-2.5	Pass	-
16	-	8/07/2021	-	1	0.0	97.0	97.5	-0.5	Pass	-
17	-	8/07/2021	-	1	0.0	95.5	96.5	-0.5	Pass	-
18	-	8/07/2021	-	1	0.0	97.0	97.5	-0.5	Pass	-
19	-	9/07/2021	-	1	0.0	98.0	98.0	-0.5	Pass	-
20	-	9/07/2021	-	1	0.0	97.0	96.5	-1.0	Pass	-
21	-	9/07/2021	-	1	0.0	97.5	96.5	-0.5	Pass	-
22	-	12/07/2021	-	2	0.0	98.0	98.0	-1.0	Pass	-
23	-	12/07/2021	-	2	0.0	98.0	97.5	-1.0	Pass	-
24	-	12/07/2021	-	2	0.0	98.5	100.0	0.0	Pass	-

25	-	13/07/2021	-	1	0.0	103.0	90.5	-3.0	Pass	-
26	-	13/07/2021	-	1	0.0	101.5	93.0	-2.5	Pass	-
27	-	13/07/2021	-	1	0.0	100.5	91.5	-3.0	Pass	-
28	-	14/07/2021	-	FSL	3.2	95.0	98.0	0.0	Pass	-
29	-	14/07/2021	-	FSL	3.7	95.5	97.0	-0.5	Pass	-
30	-	14/07/2021	-	FSL	2.5	96.5	98.0	-0.5	Pass	-
** Negative (-) value indicates that the field moisture content is drier than the optimum moisture content (OMC)										
** Positive (+) value indicates that the field moisture content is wetter than the optimum moisture content (OMC)										

---

## **Appendix D – NATA Test Results**

# Field Density Test Results AS1289.5.7.1

<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	1
<b>Location:</b>	Tarneit		

Sample No	1	2	3			
Date Tested	1/07/2021	1/07/2021	1/07/2021			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	1	1	1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m <sup>3</sup> 1.87	t/m <sup>3</sup> 1.86	t/m <sup>3</sup> 1.88			
Field Moisture Content	% 24.8	% 24.5	% 22.7			
Material:	Site Derived Clay	Site Derived Clay	Site Derived Clay			

Oversize Material	WET, %	4.0	3.6	4.3		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m <sup>3</sup>	1.95	1.94	1.96		
Optimum Moisture Content	%	27.5	27.5	25.5		



  

<b>Moisture Ratio</b>	%	90	89	89		
<b>Moisture Variation from OMC</b>	%	-3.0 Drier	-2.5 Drier	-3.0 Drier		
<b>Density Ratio</b>	%	95.5	95.5	95.5		

<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI01)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)

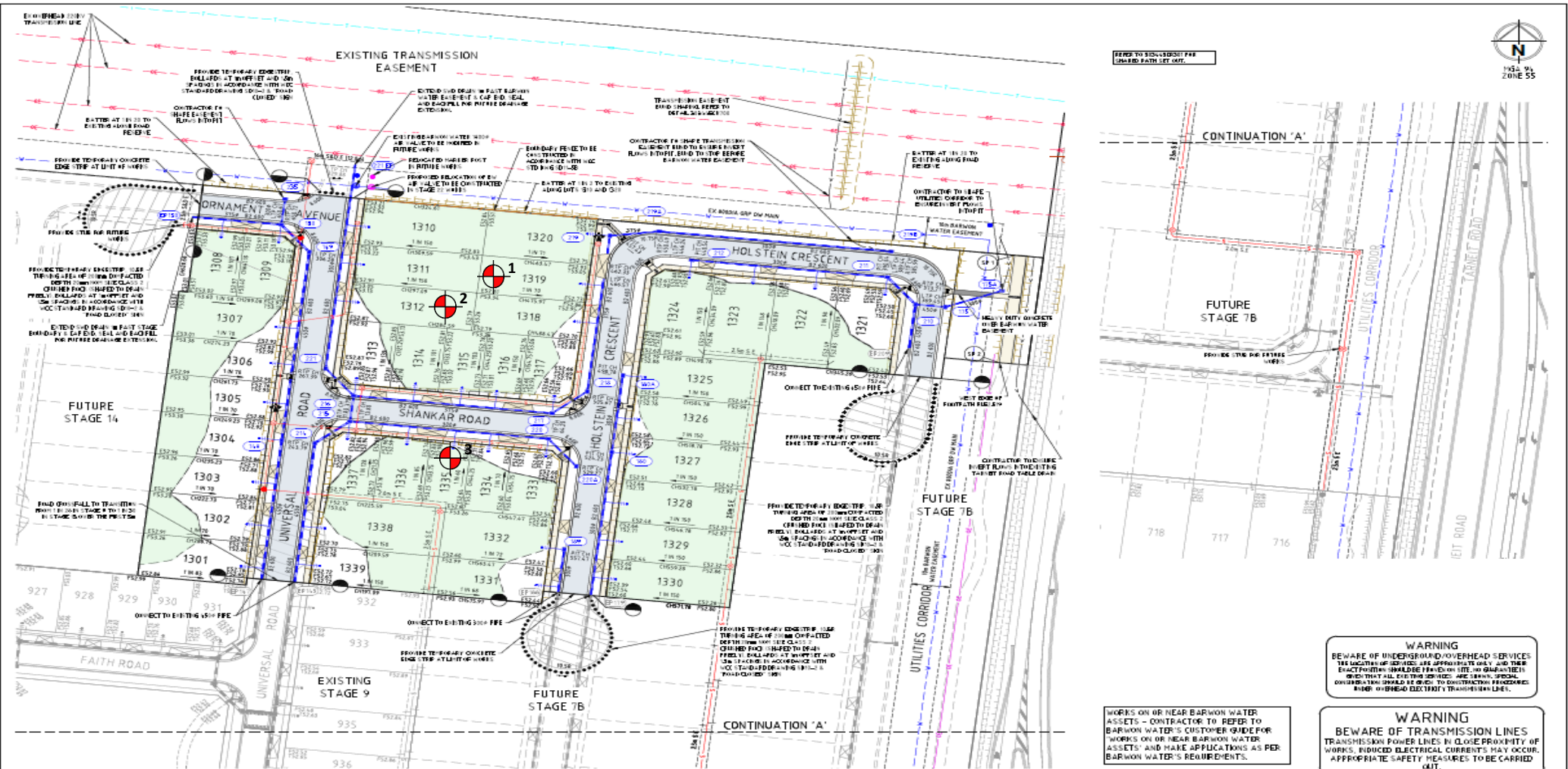
  

 <p><b>NATA</b> WORLD RECOGNISED ACCREDITATION</p>	<p>NATA Accredited Laboratory No. 20172</p> <p>Accreditation for compliance with ISO/IEC 17025 - Testing</p> <p>The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory:</p>  <p>David Burns</p> <p>Date: 5/07/2021</p>
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Test Location



REFER TO SUB-DRAWING FOR CHANGED PATH SET OUT.

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3	ISSUED FOR APPROVAL	M.H.	22/03/21
4	ISSUED FOR APPROVAL	M.H.	06/03/21



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**NEWHAVEN STAGE 13**  
ROAD AND DRAINAGE  
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PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR200 0

**PROJECT:**  
Newhaven Estate – Stage 13 (Level 1)

**LOCATION:**  
Tarneit

**CLIENT:**  
BMD Urban

**PROJECT No:**  
1120 0259-1 (SI01)

**DATE:**  
1/07/2021

**SITE PLAN SKETCH—NOT TO SCALE**





**Field Density Test Results**  
**AS1289.5.7.1**

<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	2
<b>Location:</b>	Tarneit		

Sample No	4	5	6			
Date Tested	2/07/2021	2/07/2021	2/07/2021			
Time Tested	AM	AM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	1	1	1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m <sup>3</sup> 1.84	t/m <sup>3</sup> 1.88	t/m <sup>3</sup> 1.83			
Field Moisture Content	% 24.6	% 24.1	% 25.7			
Material:	Site Derived Clay	Site Derived Clay	Site Derived Clay			

Oversize Material	WET, % 2.9	3.5	3.0			
Sieve Size	mm 19	mm 19	mm 19			
Peak Converted Wet Density	t/m <sup>3</sup> 1.92	t/m <sup>3</sup> 1.92	t/m <sup>3</sup> 1.91			
Optimum Moisture Content	% 27.5	% 27	% 28.5			



  

<b>Moisture Ratio</b>	89.5	89	90			
<b>Moisture Variation from OMC</b>	% -2.5 Drier	% -2.5 Drier	% -2.5 Drier			
<b>Density Ratio</b>	% 95.5	% 96.0	% 95.0			

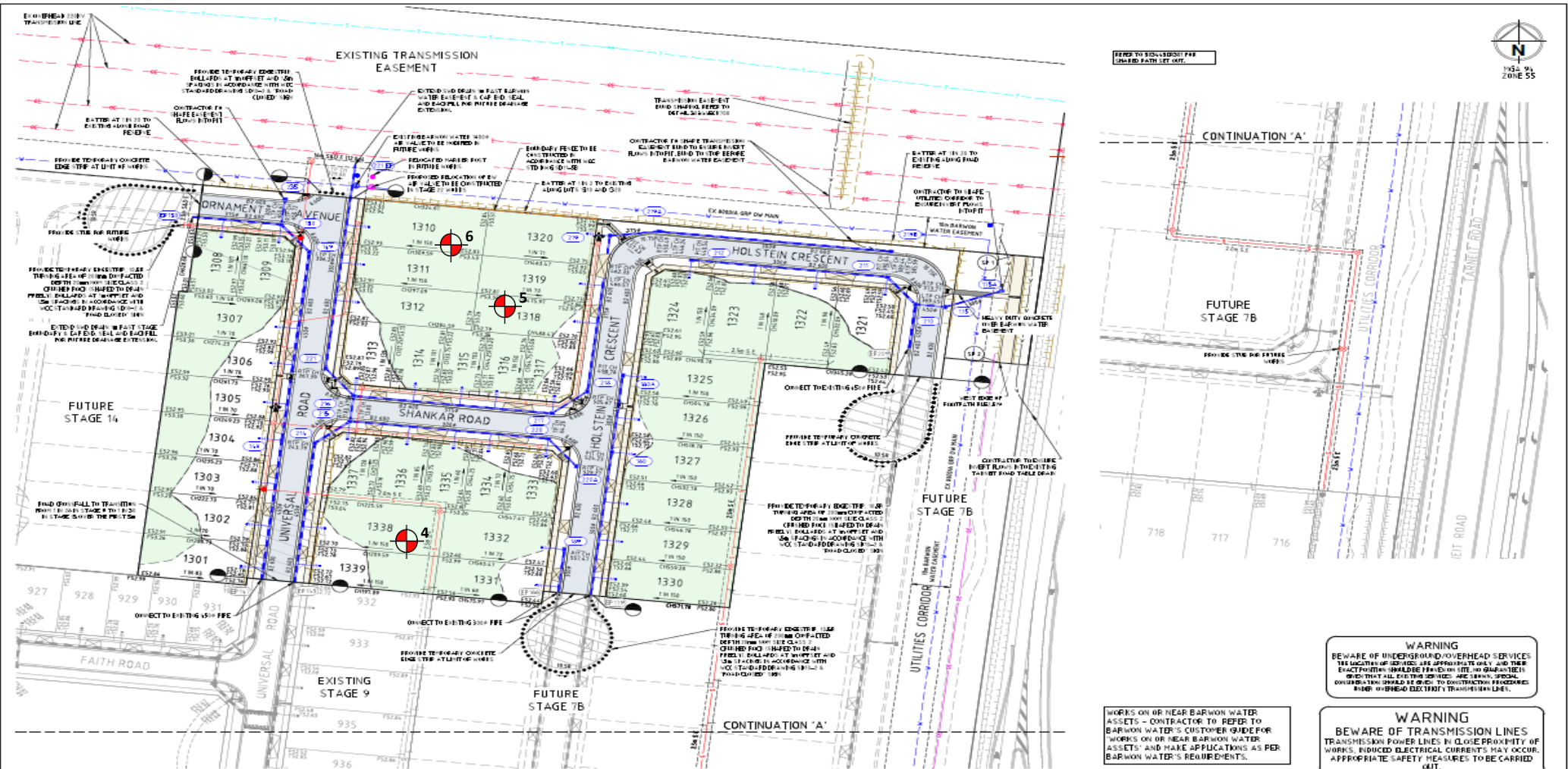
<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI02)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)

 <b>NATA</b> <small>WORLD RECOGNISED ACCREDITATION</small>	<p>NATA Accredited Laboratory No. 20172</p> <p>Accreditation for compliance with ISO/IEC 17025 - Testing</p> <p>The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory: </p> <p>David Burns</p> <p>Date: 5/07/2021</p>
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Test Location



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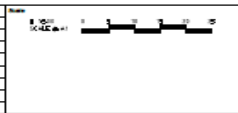
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1	ISSUED FOR TENDER	M.H.	31/03/21
2	ISSUED FOR APPROVAL	M.H.	22/03/21
3	ISSUED FOR APPROVAL	M.H.	06/03/21
4	Amendments		



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414 LA TROBE STREET PO BOX 10064 MELBOURNE  
VICTORIA 3008 AUSTRALIA T 61 3 9660 7500  
spiire.com.au ASN 55 050 029 635

**PEET**  
Designed: P. CLIFTON  
Authorised: M. HOLMES  
Checked: J. KOEHLER  
Date: 05/03/21

**NEWHAVEN STAGE 13**  
ROAD AND DRAINAGE  
FACE PLAN  
WYNCHAMPTON CITY COUNCIL  
PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR200 0

**PROJECT:**  
Newhaven Estate - Stage 13 (Level 1)

**LOCATION:**  
Tarneit

**CLIENT:**  
BMD Urban

**PROJECT No:**  
1120 0259-1 (SI02)

**DATE:**  
02/07/2021

**SITE PLAN SKETCH—NOT TO SCALE**



## Field Density Test Results AS1289.5.7.1

<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	3
<b>Location:</b>	Tarneit		

Sample No	7	8	9			
Date Tested	05/07/2021	05/07/2021	05/07/2021			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	1	1	1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m <sup>3</sup> 1.84	t/m <sup>3</sup> 1.83	t/m <sup>3</sup> 1.84			
Field Moisture Content	% 26.9	% 27.6	% 25.6			
Material:	Site Derived Clay	Site Derived Clay	Site Derived Clay			

Oversize Material	WET, %	0.0	0.0	0.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m <sup>3</sup>	1.93	1.92	1.92		
Optimum Moisture Content	%	29.5	30.5	28.5		

<b>Moisture Ratio</b>	%	91	90.5	90		
<b>Moisture Variation from OMC</b>	%	-2.5	-3.0	-3.0		
<b>Density Ratio</b>	%	Drier	Drier	Drier		
	%	95.5	95.5	96.0		

<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI03)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)



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Approved Signatory:



David Burns

Date: 06/07/2021

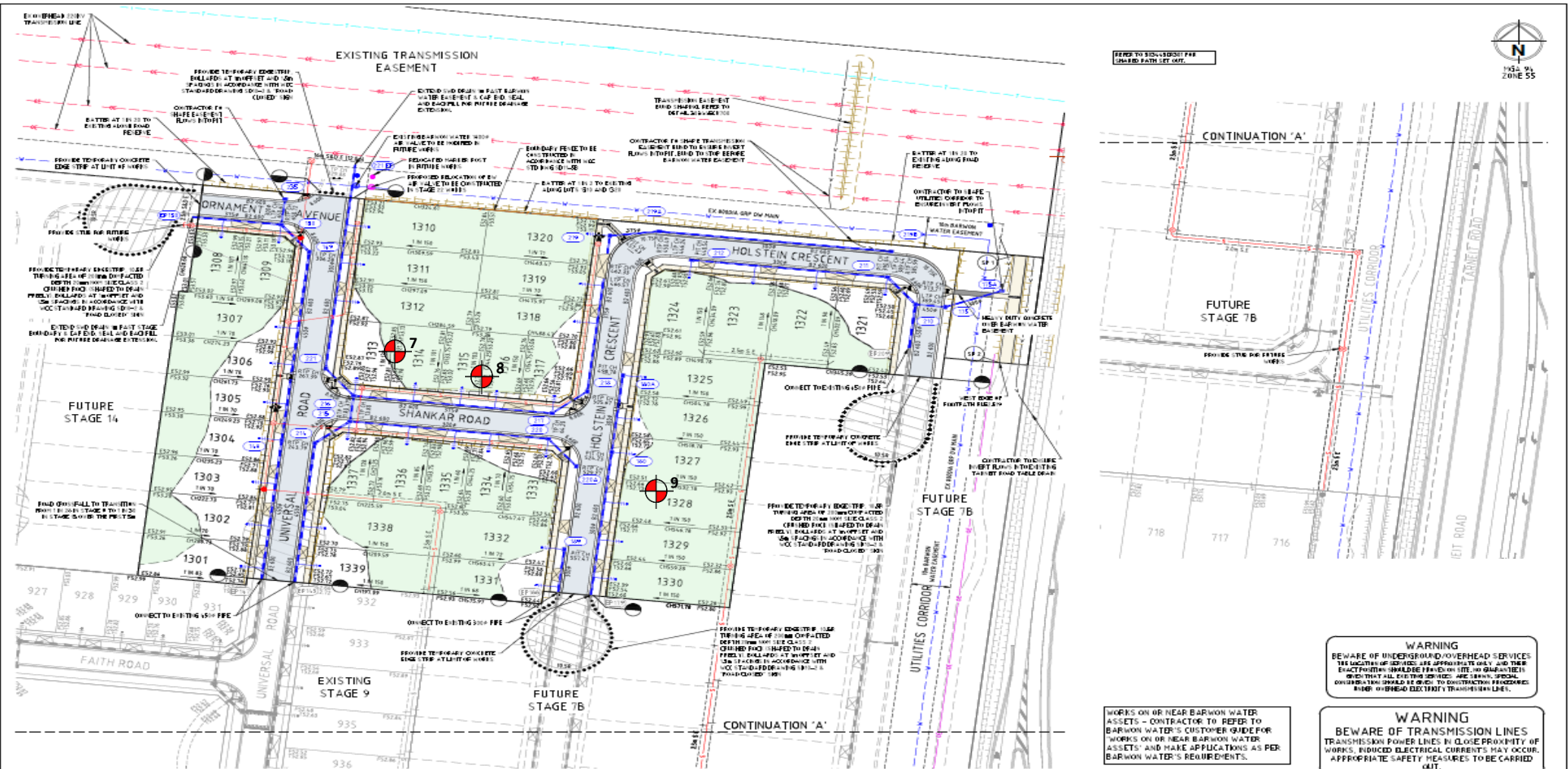




Test Location



1954 9/1  
ZONE 55



REFER TO SUB-DRAWING FOR  
CHANGED PATHS ETC.

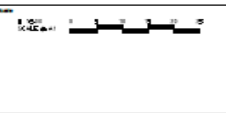
WORKS ON OR NEAR BARROW WATER  
ASSETS - CONTRACTOR TO REFER TO  
BARROW WATER'S CUSTOMER GUIDE FOR  
WORKS ON OR NEAR BARROW WATER  
ASSETS AND MAKE APPLICATIONS AS PER  
BARROW WATER'S REQUIREMENTS.

**WARNING**  
BEWARE OF UNDERGROUND/OVERHEAD SERVICES  
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR  
EXACT POSITION SHOULD BE VERIFIED ON SITE. NO GUARANTEES  
ARE GIVEN THAT ALL UTILITIES SERVICES ARE SHOWN. SPECIAL  
CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES  
NEAR OVERHEAD ELECTRICAL TRANSMISSION LINES.

**WARNING**  
BEWARE OF TRANSMISSION LINES  
TRANSMISSION POWER LINES IN CLOSE PROXIMITY OF  
WORKS. INDICATED ELECTRICAL CURRENTS MAY OCCUR.  
APPROPRIATE SAFETY MEASURES TO BE CARRIED  
OUT.

REVISIONS TO BE MADE TO THIS DRAWING IN ACCORDANCE WITH THE PROJECT PROGRAM

Rev	Description	Issue	By	Check	Date
0	ISSUED FOR CONSTRUCTION		M.H.	07/04/21	
1	ISSUED FOR TENDER		M.H.	31/03/21	
2	ISSUED FOR TRANSMISSION EASEMENT BOUND ADDED		M.H.	22/03/21	
3	ISSUED FOR APPROVAL		M.H.	05/03/21	
4	Amendments		Approved	Date	



**spiire**  
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spiire.com.au ASN 55 050 029 636

**PEET**  
Designed: P. CLIFTON  
Authorised: M. HOLMES  
Checked: J. KOEHLER  
Date: 05/03/21

**NEWHAVEN  
STAGE 13  
ROAD AND DRAINAGE  
FACE PLAN**  
WYNCHAMPTON CITY COUNCIL  
PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR200 0

**PROJECT:**  
Newhaven Estate – Stage 13 (Level 1)

**CLIENT:**  
BMD Urban

**DATE:**  
05/07/2021

**LOCATION:**  
Tarneit

**PROJECT No.:**  
1120 0259-1 (SI03)

**SITE PLAN SKETCH—NOT TO SCALE**



# Field Density Test Results

## AS1289.5.7.1

<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	4
<b>Location:</b>	Tarneit		

Sample No	10	11	12			
Date Tested	06/07/2021	06/07/2021	06/07/2021			
Time Tested	PM	PM	PM			

Test Location	Lot #1325	Lot #1323	Lot #1321			
	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	1	1	1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m <sup>3</sup> 1.85	t/m <sup>3</sup> 1.87	t/m <sup>3</sup> 1.87			
Field Moisture Content	% 24.0	% 23.7	% 23.2			
Material:	Site Derived Clay	Site Derived Clay	Site Derived Clay			

Oversize Material	WET, %	0.0	0.0	0.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m <sup>3</sup>	1.93	1.95	1.97		
Optimum Moisture Content	%	27	26.5	26		

<b>Moisture Ratio</b>	%	89	89.5	89		
<b>Moisture Variation from OMC</b>	%	-3.0	-3.0	-2.5		
<b>Density Ratio</b>	%	95.5	96.0	95.0		

<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI04)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)



NATA Accredited Laboratory No. 20172  
Accreditation for compliance with ISO/IEC 17025 - Testing  
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:

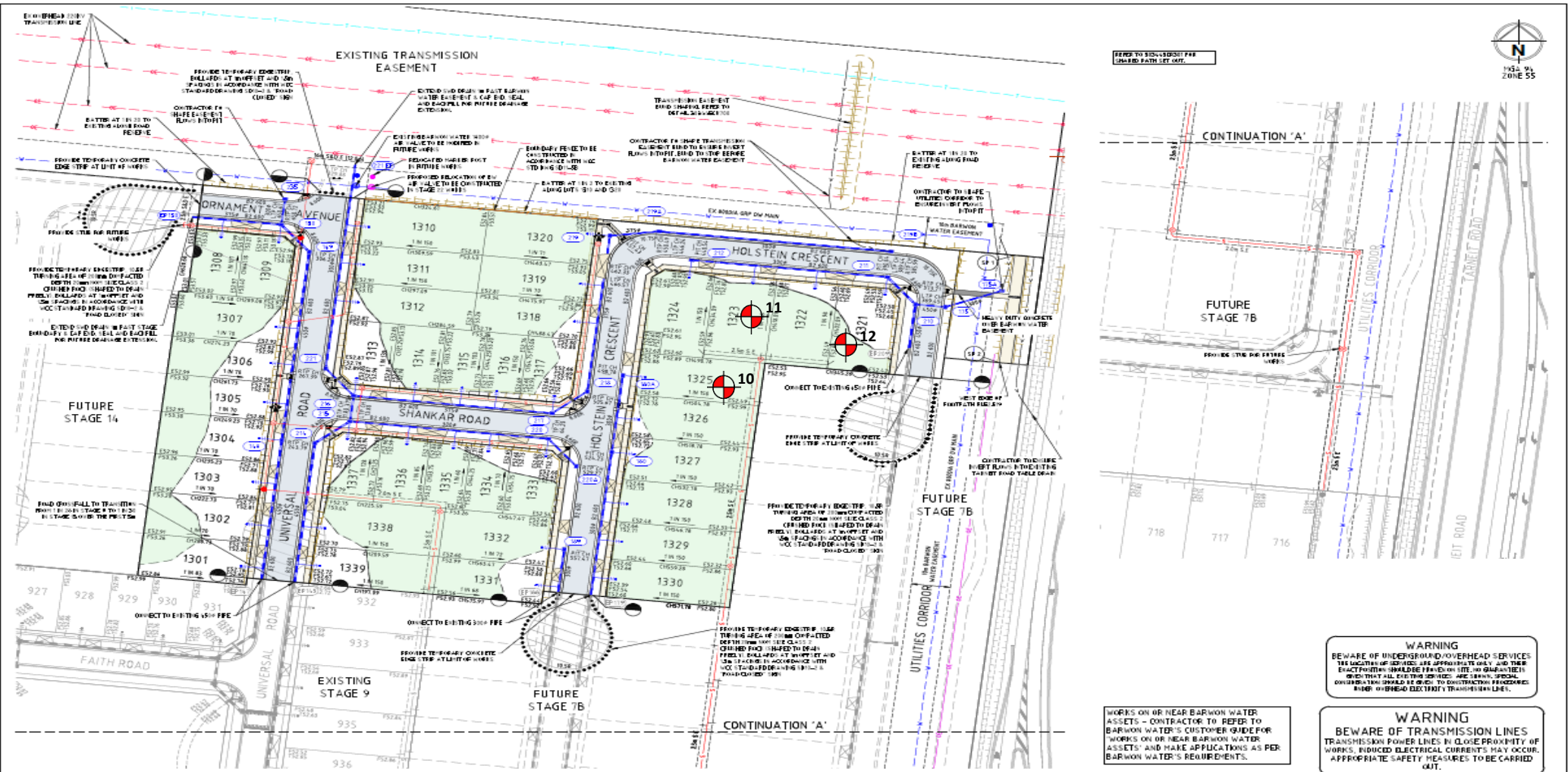


David Burns

Date: 08/07/2021



Test Location



REFER TO SUB-DRAWING FOR CHANGED PATH SET OUT.

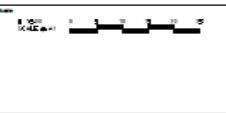
**WARNING**  
BEWARE OF UNDERGROUND/OVERHEAD SERVICES  
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE VERIFIED ON SITE. NO GUARANTEES ARE MADE THAT ALL SERVICES ARE SHOWN. SPECIAL CONSIDERATIONS SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES BASED ON RELEVANT ELECTRICAL STANDARDS.

WORKS ON OR NEAR BARROW WATER ASSETS - CONTRACTOR TO REFER TO BARROW WATER'S CUSTOMER GUIDE FOR WORKS ON OR NEAR BARROW WATER ASSETS AND MAKE APPLICATIONS AS PER BARROW WATER'S REQUIREMENTS.

**WARNING**  
BEWARE OF TRANSMISSION LINES  
TRANSMISSION POWER LINES IN CLOSE PROXIMITY OF WORKS. PROXIMITY ELECTRICAL CURRENTS MAY OCCUR. APPROPRIATE SAFETY MEASURES TO BE CARRIED OUT.

REVISIONS TO BE MADE TO THIS DRAWING IN ACCORDANCE WITH THE PROJECT PROGRAM OF WORKS.

Rev	Description	Approved	Date
0	ISSUED FOR CONSTRUCTION	M.H.	07/04/21
1	ISSUED FOR TENDER	M.H.	31/03/21
2	EXISTING TRANSMISSION EASEMENT BOUND ADDED	M.H.	22/03/21
3	ISSUED FOR APPROVAL	M.H.	06/03/21
4	Amendments		



**spiire**  
414 LA TROBE STREET PO BOX 10064 MELBOURNE  
VICTORIA 3008 AUSTRALIA T 61 3 8660 7508  
spiire.com.au ASN 55 050 029 636

**PEET**  
Designed: P. CLIFTON  
Authorised: M. HOLMES  
Checked: J. KOEHLER  
Date: 05/03/21

**NEWHAVEN STAGE 13**  
ROAD AND DRAINAGE  
FACE PLAN  
WYNCHAMPTON CITY COUNCIL  
PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR200 0

**PROJECT:**  
Newhaven Estate – Stage 13 (Level 1)

**LOCATION:**  
Tarneit

**CLIENT:**  
BMD Urban

**PROJECT No:**  
1120 0259-1 (SI04)

**DATE:**  
06/07/2021

**SITE PLAN SKETCH—NOT TO SCALE**





## Field Density Test Results AS1289.5.7.1

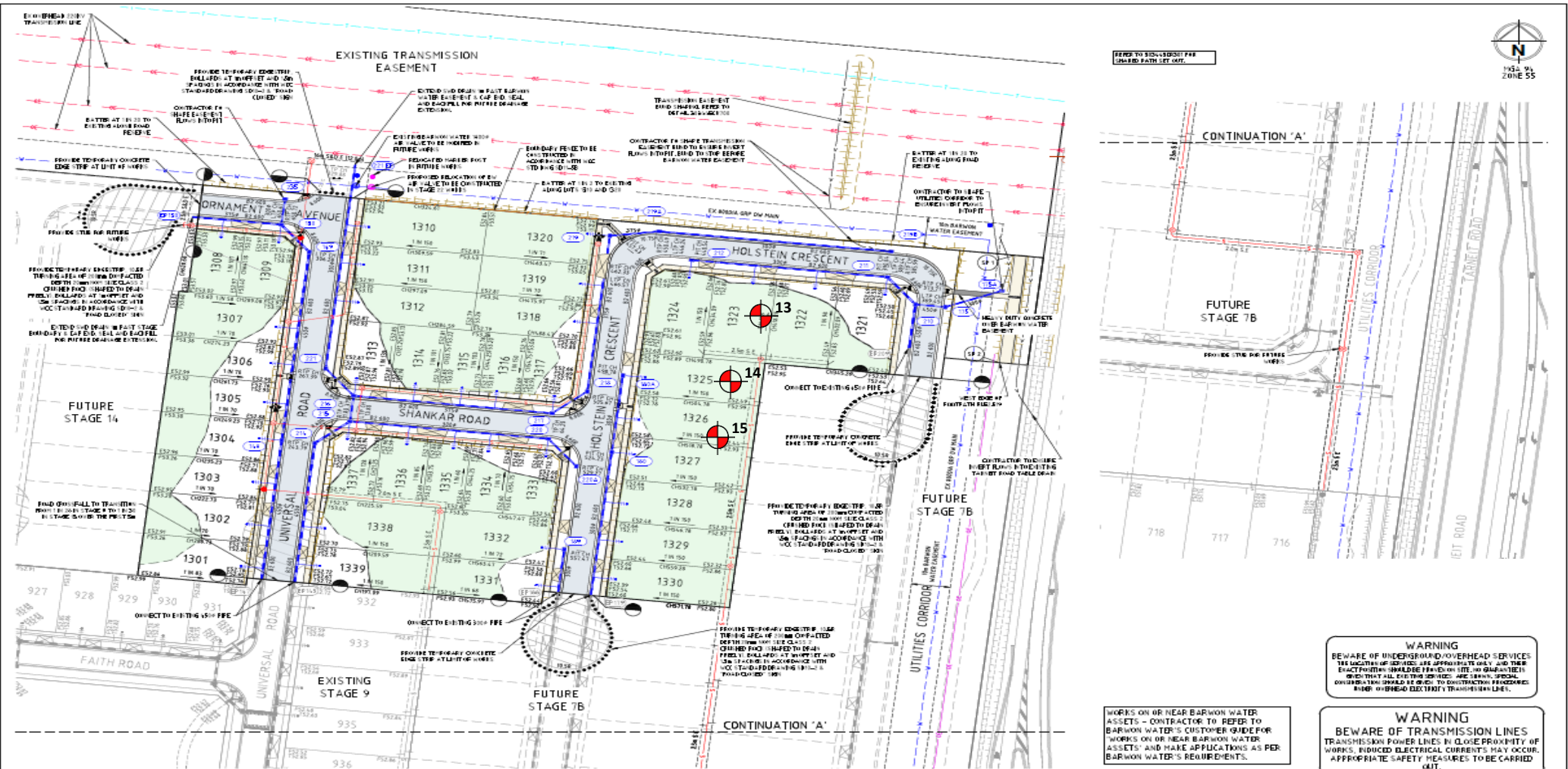
<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	5
<b>Location:</b>	Tarneit		
Sample No	13	14	15
Date Tested	07/07/2021	07/07/2021	07/07/2021
Time Tested	PM	PM	PM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	2	2	2
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m <sup>3</sup> 1.90	t/m <sup>3</sup> 1.87	t/m <sup>3</sup> 1.83
Field Moisture Content	% 16.5	% 25.2	% 25.6
Material:	Site Derived Clay	Site Derived Clay	Site Derived Clay
Oversize Material	WET, % 0.0	WET, % 0.0	WET, % 0.0
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m <sup>3</sup> 1.97	t/m <sup>3</sup> 1.96	t/m <sup>3</sup> 1.92
Optimum Moisture Content	% 19	% 28	% 28.5
<b>Moisture Ratio</b>	% 87	% 90	% 90
<b>Moisture Variation from OMC</b>	% -2.5 Drier	% -3.0 Drier	% -2.5 Drier
<b>Density Ratio</b>	% 96.5	% 95.5	% 95.0

<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI05)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)

 <p><b>NATA</b> WORLD RECOGNISED ACCREDITATION</p>	<p>NATA Accredited Laboratory No. 20172</p> <p>Accreditation for compliance with ISO/IEC 17025 - Testing</p> <p>The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory:</p> <div style="text-align: center;">               David Burns         </div> <p>Date: 08/07/2021</p>
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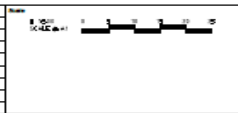


Test Location



Newhaven Estate - Stage 13 (Level 1) - Final Construction Drawing - 2021/07/07

Rev	Description	Issue Date	Approved	Date
0	ISSUED FOR CONSTRUCTION		M.H.	07/04/21
1	ISSUED FOR TENDER		M.H.	31/03/21
2	EXISTING TRANSMISSION EASEMENT BOUND ADDED		M.H.	22/03/21
3	ISSUED FOR APPROVAL		M.H.	06/03/21
4	Amendments			



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 414 LA TROBE STREET PO BOX 1006 MELBOURNE  
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**PEET**  
 Designed: P. CLIFTON  
 Authorised: M. HOLMES  
 Checked: J. KOEHLER  
 Date: 05/03/21

**NEWHAVEN STAGE 13**  
 ROAD AND DRAINAGE  
 FACE PLAN  
 WYNCHAMPTON CITY COUNCIL  
 PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR200 0

**PROJECT:**  
 Newhaven Estate – Stage 13 (Level 1)

**LOCATION:**  
 Tarneit

**CLIENT:**  
 BMD Urban

**PROJECT No:**  
 1120 0259-1 (SI05)

**DATE:**  
 07/07/2021

**SITE PLAN SKETCH—NOT TO SCALE**



## Field Density Test Results AS1289.5.7.1

<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	6
<b>Location:</b>	Tarneit		

Sample No	16	17	18			
Date Tested	08/07/2021	08/07/2021	08/07/2021			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	1	1	1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m <sup>3</sup> 1.92	t/m <sup>3</sup> 1.94	t/m <sup>3</sup> 1.90			
Field Moisture Content	% 18.5	% 18.8	% 18.5			
Material:	Site Derived Clay	Site Derived Clay	Site Derived Clay			

Oversize Material	WET, %	0.0	0.0	0.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m <sup>3</sup>	1.98	2.03	1.96		
Optimum Moisture Content	%	19	19.5	19		

<b>Moisture Ratio</b>	%	97.5	96.5	97.5		
<b>Moisture Variation from OMC</b>	%	-0.5	-0.5	-0.5		
<b>Density Ratio</b>	%	97.0	95.5	97.0		

<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI06)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)



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The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:

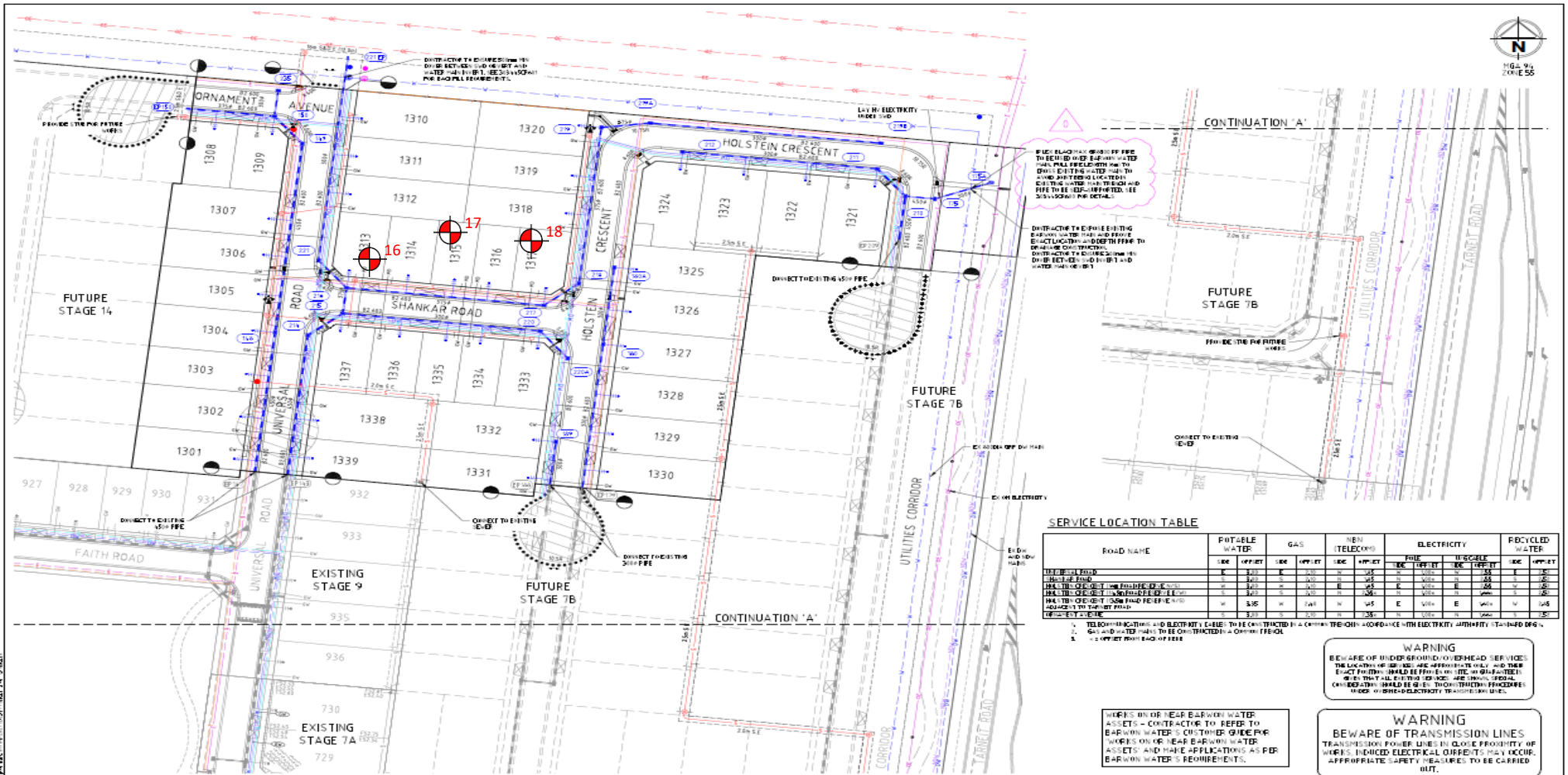


David Burns

Date: 13/07/2021



Test Location



SERVICE LOCATION TABLE

ROAD NAME	POTABLE WATER		GAS		NBN (TELECOM)		ELECTRICITY		RECYCLED WATER	
	SIZE	DEPTH	SIZE	DEPTH	SIZE	DEPTH	SIZE	DEPTH	SIZE	DEPTH
UNIVERSAL ROAD	150	1.20	100	1.20	100	1.20	100	1.20	100	1.20
SHANKAR ROAD	150	1.20	100	1.20	100	1.20	100	1.20	100	1.20
HOLSTEIN CRESCENT	150	1.20	100	1.20	100	1.20	100	1.20	100	1.20
FAITH ROAD	150	1.20	100	1.20	100	1.20	100	1.20	100	1.20
UNIVERSAL ROAD	150	1.20	100	1.20	100	1.20	100	1.20	100	1.20

1. TELECOM LOCATIONS AND ELECTRICITY CABLES TO BE CONSTRUCTED IN ACCORDANCE WITH ELECTRICITY AUTHORITY STANDARDS.
2. GAS AND WATER MAINS TO BE CONSTRUCTED IN ACCORDANCE WITH GAS AND WATER AUTHORITY STANDARDS.

**WARNING**  
BE AWARE OF UNDERGROUND OVERHEAD SERVICES. THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVIDED BY THE UTILITY PROVIDER. IF ANY SERVICES ARE FOUND TO BE IN CLOSE PROXIMITY TO THE CONSTRUCTION AREA, APPROPRIATE SAFETY MEASURES SHOULD BE TAKEN.

WORKS ON OR NEAR BARROW WATER ASSETS - CONTRACTOR TO REFER TO BARROW WATER'S CUSTOMER GUIDE FOR WORKS ON OR NEAR BARROW WATER ASSETS AND MAKE APPLICATIONS AS PER BARROW WATER'S REQUIREMENTS.

**WARNING**  
BE AWARE OF TRANSMISSION LINES. TRANSMISSION POWER LINES IN CLOSE PROXIMITY OF WORKS INDICATED ELECTRICAL OBJECTS MAY OCCUR. APPROPRIATE SAFETY MEASURES TO BE CARRIED OUT.

Rev	Description	Approved	Date
0	ISSUED FOR CONSTRUCTION. PIPE CHANGE PER BARROW WATER COMMENTS	M.H.	07/04/21
1	ISSUED FOR TENDER	M.H.	31/03/21
2	REVISED	M.H.	22/03/21
3	ISSUED FOR APPROVAL	M.H.	05/03/21
4	Amendments		



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414 LA TROBE STREET PO BOX 10084 MELBOURNE  
VICTORIA 3007 AUSTRALIA T 03 9895 7300  
spiire.com.au ABN 55 050 029 635

**PEET**  
Designed: P. CLIFTON  
Authorised: M. HOLMES  
Checked: J. KOEHLER  
Date: 05/03/21

**NEHAVERN STAGE 13 ROAD AND DRAINAGE SERVICE PLAN**  
WYNDHAM CITY COUNCIL  
PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR201 0

**PROJECT:**  
Newhaven Estate – Stage 13 (Level 1)

**LOCATION:**  
Tarnet

**CLIENT:**  
BMD Urban

**PROJECT No:**  
1120 0259-1 (SI06)

**DATE:**  
08/07/2021

**SITE PLAN SKETCH—NOT TO SCALE**

## Field Density Test Results AS1289.5.7.1

<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	7
<b>Location:</b>	Tarneit		
Sample No	19	20	21
Date Tested	09/07/2021	09/07/2021	09/07/2021
Time Tested	AM	AM	PM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	1	1	1
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m <sup>3</sup> 1.99	t/m <sup>3</sup> 1.92	t/m <sup>3</sup> 1.91
Field Moisture Content	% 21.1	% 22.2	% 21.2
Material:	Site Derived Clay	Site Derived Clay	Site Derived Clay
Oversize Material	WET, % 0.0	WET, % 0.0	WET, % 0.0
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m <sup>3</sup> 2.03	t/m <sup>3</sup> 1.98	t/m <sup>3</sup> 1.96
Optimum Moisture Content	% 21.5	% 23	% 22
<b>Moisture Ratio</b>	% 98	% 96.5	% 96.5
<b>Moisture Variation from OMC</b>	% -0.5 Drier	% -1.0 Drier	% -1.0 Drier
<b>Density Ratio</b>	% 98.0	% 97.0	% 97.5

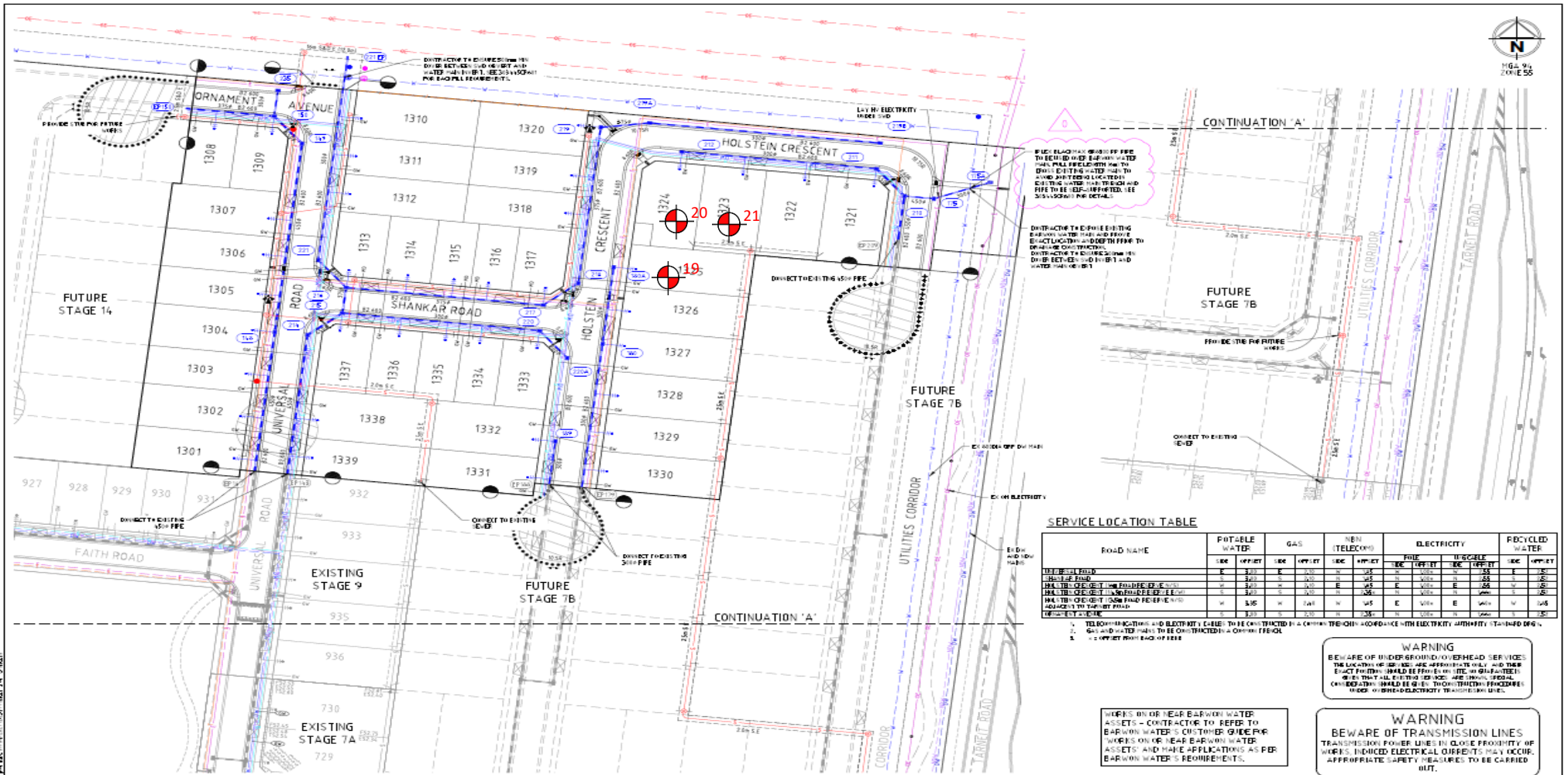
<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI07)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)

 <b>NATA</b> <small>WORLD RECOGNISED ACCREDITATION</small>	<p>NATA Accredited Laboratory No. 20172</p> <p>Accreditation for compliance with ISO/IEC 17025 - Testing</p> <p>The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory:</p> <div style="text-align: center;">               David Burns         </div> <p>Date: 13/07/2021</p>
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Test Location



**SERVICE LOCATION TABLE**

ROAD NAME	POTABLE WATER		GAS		NBN (TELECOM)		ELECTRICITY		RECYCLED WATER	
	SIZE	DEPTH	SIZE	DEPTH	SIZE	DEPTH	SIZE	DEPTH	SIZE	DEPTH
UNIVERSAL ROAD	150	1.0	150	1.0	150	1.0	150	1.0	150	1.0
SHANKAR ROAD	150	1.0	150	1.0	150	1.0	150	1.0	150	1.0
HOLSTEIN CRESCENT	150	1.0	150	1.0	150	1.0	150	1.0	150	1.0
FAITH ROAD	150	1.0	150	1.0	150	1.0	150	1.0	150	1.0
CONTINUATION 'A'	150	1.0	150	1.0	150	1.0	150	1.0	150	1.0
UTILITY CORRIDOR	150	1.0	150	1.0	150	1.0	150	1.0	150	1.0

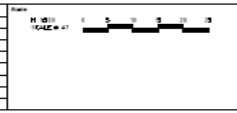
1. TELECOM LOCATIONS AND ELECTRICITY CABLES TO BE CONSTRUCTED IN ACCORDANCE WITH ELECTRICITY AUTHORITY STANDARDS.
2. GAS AND WATER MAINS TO BE CONSTRUCTED IN ACCORDANCE WITH GAS AND WATER SUPPLY AUTHORITY STANDARDS.

**WARNING**  
BE AWARE OF UNDERGROUND OVERHEAD SERVICES. THE LOCATION OF SERVICES ARE APPROXIMATE AND THEIR EXACT POSITION SHOULD BE PROVIDED BY THE CLIENT. IF ANY SERVICES ARE FOUND TO BE IN CONFLICT WITH THE PROPOSED CONSTRUCTION, APPROPRIATE SAFETY MEASURES SHOULD BE TAKEN TO AVOID DAMAGE TO SUCH SERVICES.

**WORKS ON OR NEAR BARROW WATER ASSETS - CONTRACTOR TO REFER TO BARROW WATER'S CUSTOMER GUIDE FOR WORKS ON OR NEAR BARROW WATER ASSETS AND MAKE APPLICATIONS AS PER BARROW WATER'S REQUIREMENTS.**

**WARNING**  
BE AWARE OF TRANSMISSION LINES. TRANSMISSION POWER LINES IN CLOSE PROXIMITY OF WORKS INDICATED ELECTRICAL OBJECTS MAY OCCUR. APPROPRIATE SAFETY MEASURES TO BE CARRIED OUT.

Rev	Description	Approved	Date
C	ISSUED FOR CONSTRUCTION. PIPE CHANGE PER BARROW WATER COMMENTS	M.H.	07/04/21
B	ISSUED FOR TENDER	M.H.	31/03/21
A	ISSUED FOR APPROVAL	M.H.	22/03/21
Rev	Amendments	Approved	Date



**spiire**  
414 LA TROBE STREET PO BOX 18064 MELBOURNE  
VICTORIA 3007 AUSTRALIA T: 03 9993 7338  
spiire.com.au ABN: 55 050 029 635

**PEET**  
Designed: P. CLIFTON  
Authorised: M. HOLMES  
Checked: J. KOEHLER  
Date: 05/03/21

**NEHAVEN STAGE 13 ROAD AND DRAINAGE SERVICE PLAN**  
WYNDHAM CITY COUNCIL  
PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR201 0

<b>PROJECT:</b> Newhaven Estate – Stage 13 (Level 1)	<b>CLIENT:</b> BMD Urban	<b>DATE:</b> 09/07/2021
<b>LOCATION:</b> Tarnet	<b>PROJECT No:</b> 1120 0259-1 (SI07)	<b>SITE PLAN SKETCH—NOT TO SCALE</b>



## Field Density Test Results AS1289.5.7.1

<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	8
<b>Location:</b>	Tarneit		

Sample No	22	23	24			
Date Tested	12/07/2021	12/07/2021	12/07/2021			
Time Tested	AM	AM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 2	Layer 2	Layer 2			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m <sup>3</sup> 1.87	t/m <sup>3</sup> 1.85	t/m <sup>3</sup> 1.89			
Field Moisture Content	% 20.4	% 22.4	% 20.0			
Material:	Site Derived Clay	Site Derived Clay	Site Derived Clay			


Oversize Material	WET, % 0.0	0.0	0.0			
Sieve Size	mm 19	mm 19	mm 19			
Peak Converted Wet Density	t/m <sup>3</sup> 1.91	t/m <sup>3</sup> 1.89	t/m <sup>3</sup> 1.92			
Optimum Moisture Content	% 21.5	% 23	% 20			

<b>Moisture Ratio</b>	%	95	97.5	100		
<b>Moisture Variation from OMC</b>	%	-1.0	-1.0	0.0		
		Drier	Drier	OMC		
<b>Density Ratio</b>	%	98.0	98.0	98.5		

<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI08)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)



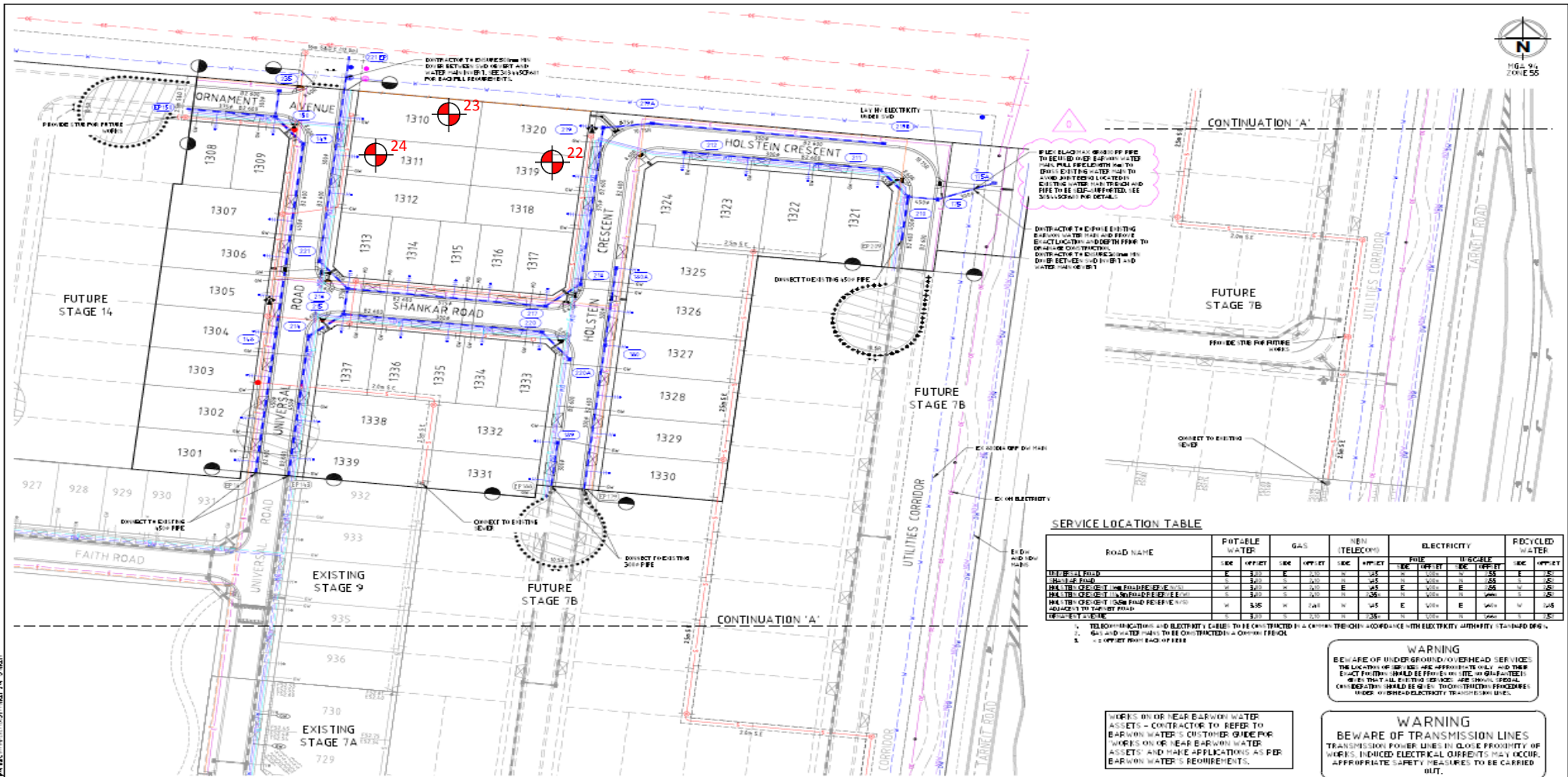
NATA Accredited Laboratory No. 20172  
Accreditation for compliance with ISO/IEC 17025 - Testing  
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:   
David Burns  
Date: 14/07/2021





Test Location



SERVICE LOCATION TABLE

ROAD NAME	POTABLE WATER		GAS		NBN (TELECOM)		ELECTRICITY		RECYCLED WATER	
	SIDE	DEPTH	SIDE	DEPTH	SIDE	DEPTH	SIDE	DEPTH	SIDE	DEPTH
ORNAIMENT AVENUE	E	3.00	E	3.00	N	0.50	E	1.50	E	2.00
HOLSTEIN CRESCENT	E	3.00	E	3.00	N	0.50	E	1.50	E	2.00
SHANKAR ROAD	E	3.00	E	3.00	N	0.50	E	1.50	E	2.00
UNIVERSAL ROAD	W	3.00	W	3.00	N	0.50	E	1.50	E	2.00
FAITH ROAD	W	3.00	W	3.00	N	0.50	E	1.50	E	2.00

- TELECOM LOCATIONS AND ELECTRICAL CABLES TO BE CONSTRUCTED IN ACCORDANCE WITH ELECTRICITY AUTHORITY STANDARDS.
- GAS AND WATER MAINS TO BE CONSTRUCTED IN ACCORDANCE WITH GAS AUTHORITY STANDARDS.
- CONNECTION POINTS TO BE DETERMINED BY THE CONTRACTOR.

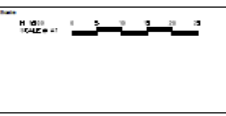
**WARNING**  
BE AWARE OF UNDERGROUND OVERHEAD SERVICES. THE LOCATION OF SERVICES ARE APPROXIMATE AND THEIR EXACT POSITION SHOULD BE PROVIDED BY THE CONTRACTOR. CONSULT WITH THE APPROPRIATE AGENCIES FOR MORE DETAILED INFORMATION.

**WARNING**  
BE AWARE OF TRANSMISSION LINES. TRANSMISSION POWER LINES IN CLOSE PROXIMITY OF WORKS INDICATED ELECTRICAL OBJECTS MAY OCCUR. APPROPRIATE SAFETY MEASURES TO BE CARRIED OUT.

WORKS ON OR NEAR BARROW WATER ASSETS - CONTRACTOR TO REFER TO BARROW WATER'S CUSTOMER GUIDE FOR WORKS ON OR NEAR BARROW WATER ASSETS AND MAKE APPLICATIONS AS PER BARROW WATER'S REQUIREMENTS.

DATE ISSUED FOR APPROVAL: 05/03/21  
 DATE ISSUED FOR TENDER: 05/03/21  
 DATE ISSUED FOR CONSTRUCTION: 05/03/21  
 DATE ISSUED FOR FINAL REVIEW: 05/03/21

Rev.	Amendments	M.H.	Approved	Date
C	ISSUED FOR CONSTRUCTION. PIPE CHANGE PER BARROW WATER COMMENTS	M.H.		07/04/21
B	ISSUED FOR TENDER	M.H.		31/03/21
A	DIT DRAWN	M.H.		22/03/21
0	ISSUED FOR APPROVAL	M.H.		05/03/21



**spiire**  
414 LA TROBE STREET PO BOX 16084 MELBOURNE  
VICTORIA 3007 AUSTRALIA T 03 9005 7300  
spiire.com.au ABN 55 050 029 635

**PEET**  
Designed: P. CLIFTON  
Authorised: M. HOLMES  
Checked: J. KOEHLER  
Date: 05/03/21

**NEHAVEN STAGE 13 ROAD AND DRAINAGE SERVICE PLAN**  
WINDHAM CITY COUNCIL  
PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR201 0

<b>PROJECT:</b> Newhaven Estate – Stage 13 (Level 1)	<b>CLIENT:</b> BMD Urban	<b>DATE:</b> 12/07/2021
<b>LOCATION:</b> Tarnet	<b>PROJECT No:</b> 1120 0259-1 (SI08)	<b>SITE PLAN SKETCH—NOT TO SCALE</b>



## Field Density Test Results AS1289.5.7.1

<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	9
<b>Location:</b>	Tarneit		

Sample No	25	26	27			
Date Tested	13/07/2021	13/07/2021	13/07/2021			
Time Tested	AM	AM	AM			

Test Location	Lot #1314	Lot #1315	Lot #1316			
	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 1	Layer 1	Layer 1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m <sup>3</sup> 1.89	t/m <sup>3</sup> 1.87	t/m <sup>3</sup> 1.89			
Field Moisture Content	% 26.2	% 34.8	% 28.3			
Material:	Site Derived Clay	Site Derived Clay	Site Derived Clay			

Oversize Material	WET, %	0.0	0.0	0.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m <sup>3</sup>	1.84	1.84	1.88		
Optimum Moisture Content	%	29	37.5	31		

<b>Moisture Ratio</b>	%	90.5	93	91.5		
<b>Moisture Variation from OMC</b>	%	-3.0	-2.5	-3.0		
<b>Density Ratio</b>	%	103.0	101.5	100.5		

<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI09)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)



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Approved Signatory:

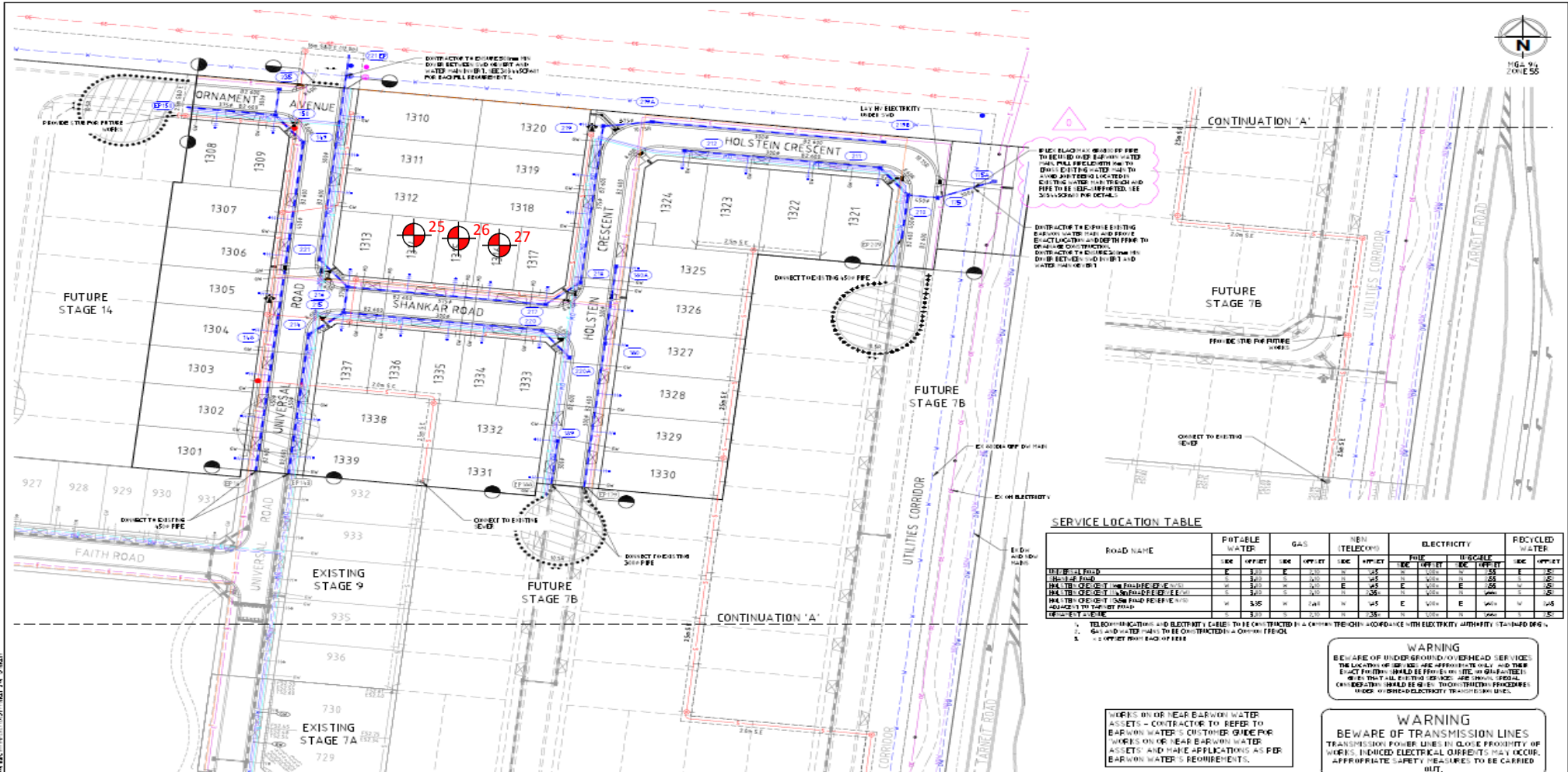


David Burns

Date: 15/07/2021



Test Location



SERVICE LOCATION TABLE

ROAD NAME	POTABLE WATER		GAS		NBN (TELECOM)		ELECTRICITY		RECYCLED WATER	
	SIZE	DEPTH	SIZE	DEPTH	SIZE	DEPTH	SIZE	DEPTH	SIZE	DEPTH
UNIVERSAL ROAD	150	3.00	150	3.00	150	3.00	300	3.00	150	3.00
FAITH ROAD	150	3.00	150	3.00	150	3.00	300	3.00	150	3.00
HOLSTEIN CRESCENT	150	3.00	150	3.00	150	3.00	300	3.00	150	3.00
SHANKAR ROAD	150	3.00	150	3.00	150	3.00	300	3.00	150	3.00
ORNAIMENT AVENUE	150	3.00	150	3.00	150	3.00	300	3.00	150	3.00
CONTINUATION 'A'	150	3.00	150	3.00	150	3.00	300	3.00	150	3.00

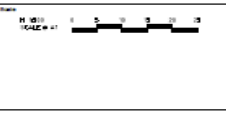
1. TELEPHONE LOCATIONS AND ELECTRICITY CABLES TO BE CONSTRUCTED IN ACCORDANCE WITH ELECTRICITY AUTHORITY STANDARDS.
2. GAS AND WATER MAINS TO BE CONSTRUCTED IN ACCORDANCE WITH STANDARDS.

**WARNING**  
BE AWARE OF UNDERGROUND/OVERHEAD SERVICES  
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PREVIOUSLY ASSESSED AND MARKED PRIOR TO CONSTRUCTION. CONSULT WITH UTILITY PROVIDERS FOR CONSTRUCTION PROCEDURES PRIOR TO WORK COMMENCING.

**WARNING**  
BE AWARE OF TRANSMISSION LINES  
TRANSMISSION POWER LINES IN CLOSE PROXIMITY OF WORKS INDICATED ELECTRICAL OBJECTS MAY OCCUR. APPROPRIATE SAFETY MEASURES TO BE CARRIED OUT.

WORKS ON OR NEAR BARROW WATER ASSETS - CONTRACTOR TO REFER TO BARROW WATER'S CUSTOMER GUIDE FOR WORKS ON OR NEAR BARROW WATER ASSETS AND MAKE APPLICATIONS AS PER BARROW WATER'S REQUIREMENTS.

ISSUED FOR APPROVAL	M.H.	05/03/21
ISSUED FOR TENDER	M.H.	31/03/21
ISSUED FOR CONSTRUCTION	M.H.	07/04/21
ISSUED FOR APPROVAL	M.H.	05/03/21
ISSUED FOR TENDER	M.H.	31/03/21
ISSUED FOR CONSTRUCTION	M.H.	07/04/21



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414 LA TROBE STREET PO BOX 16084 MELBOURNE  
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**PEET**  
Designed P. CLIFTON  
Authorised M. HOLMES  
Checked J. KOEHLER  
Date 05/03/21

**NEWHAVEN STAGE 13**  
ROAD AND DRAINAGE SERVICE PLAN  
WYNDHAM CITY COUNCIL  
PEET NO. 1895 PTY LTD  
**CONSTRUCTION** 303445CR201 0

**PROJECT:**  
Newhaven Estate – Stage 13 (Level 1)

**LOCATION:**  
Tarnet

**CLIENT:**  
BMD Urban

**PROJECT No:**  
1120 0259-1 (SI09)

**DATE:**  
13/07/2021

**SITE PLAN SKETCH—NOT TO SCALE**



# Field Density Test Results

## AS1289.5.7.1

<b>Client:</b>	BMD Urban	<b>Job No:</b>	BMD1740
<b>Project:</b>	Newhaven Estate - Stage 13 (Level 1)	<b>Report:</b>	10
<b>Location:</b>	Tarneit		

Sample No	28	29	30			
Date Tested	14/07/2021	14/07/2021	14/07/2021			
Time Tested	AM	AM	AM			

Test Location	Lot #1308	Lot #1306	Lot #1304			
	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Final Layer	Final Layer	Final Layer			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m <sup>3</sup> 2.01	t/m <sup>3</sup> 1.94	t/m <sup>3</sup> 2.08			
Field Moisture Content	% 17.2	% 18.0	% 16.7			
Material:	Site Derived Clay Fill	Site Derived Clay Fill	Site Derived Clay Fill			

Oversize Material	WET, %	3.2	3.7	2.5		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m <sup>3</sup>	2.12	2.02	2.16		
Optimum Moisture Content	%	17.5	18.5	17		

<b>Moisture Ratio</b>	%	98	97	98		
<b>Moisture Variation from OMC</b>	%	0.0	-0.5	-0.5		
<b>Density Ratio</b>	%	95.0	95.5	96.5		

<b>Specification:</b>	95% STD	<b>Test Selection:</b>	N/A
<b>Notes:</b>	Ref: 1120 0259-1 (SI10)		
<b>Test Method</b>	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	<b>Sampling Method:</b>	AS 1289 1.2.1 6.4(b)



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Approved Signatory:



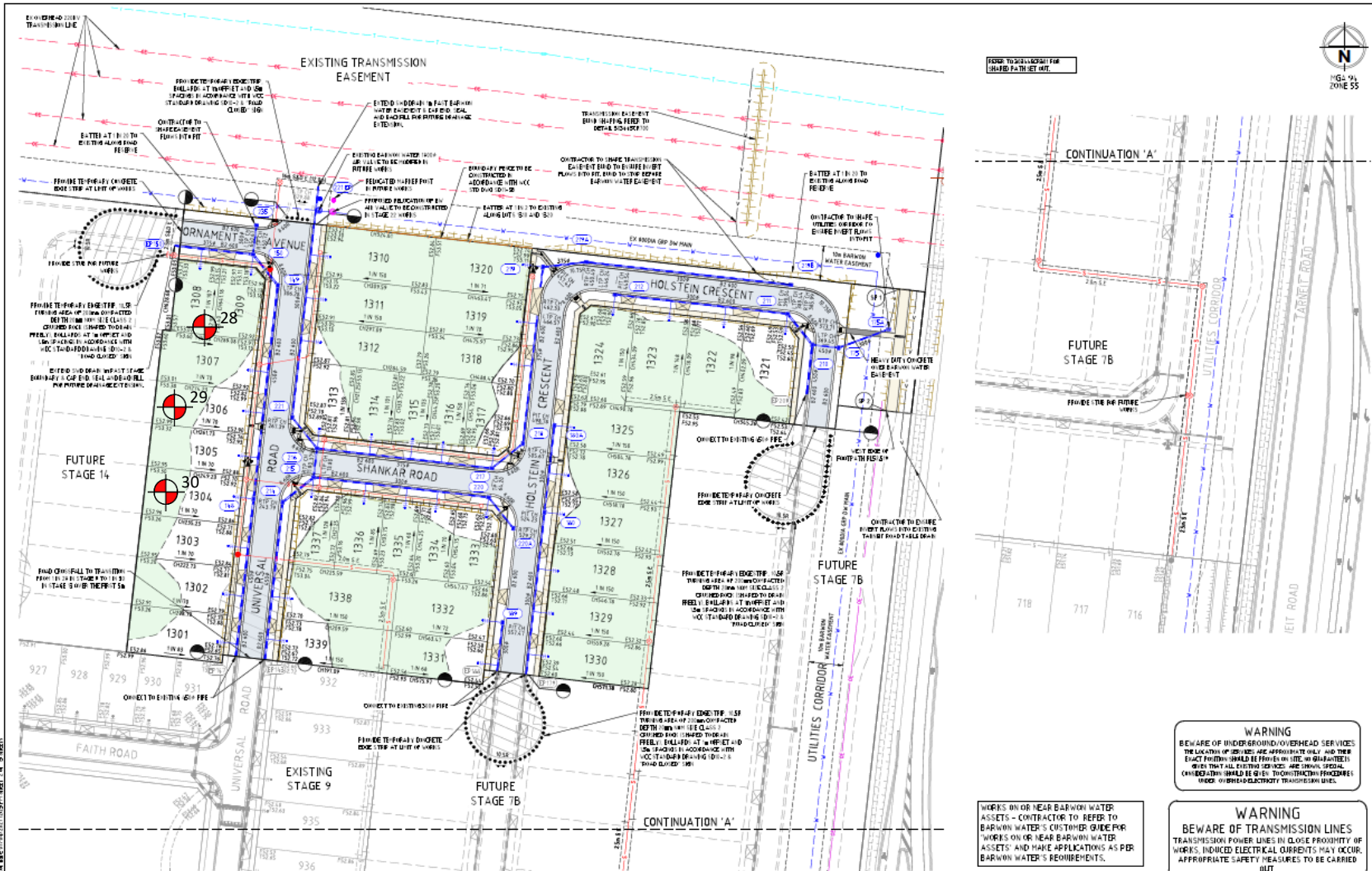
David Burns

Date: 16/07/2021

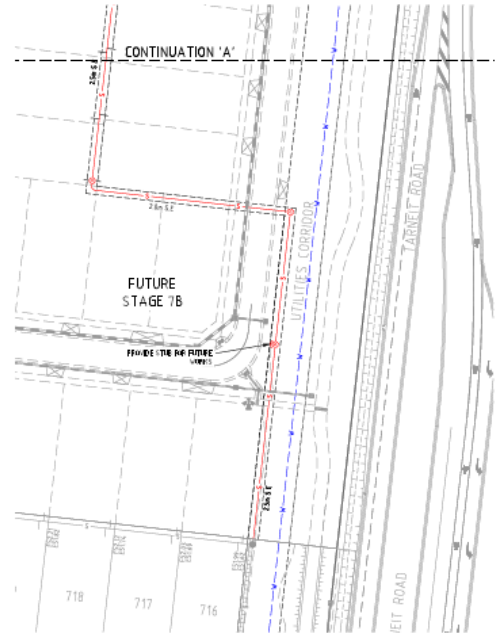




Test Location



REFER TO DRAWING FOR SHARED PATH SET OUT.



**WARNING**  
BEWARE OF UNDERGROUND/OVERHEAD SERVICES  
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY WORKS. INDICED ELECTRICAL SERVICES MAY BE OVERLAPPED BY OTHER ELECTRICAL TRANSMISSION LINES.

**WARNING**  
BEWARE OF TRANSMISSION LINES  
TRANSMISSION POWER LINES IN CLOSE PROXIMITY OF WORKS. INDICED ELECTRICAL SERVICES MAY BE OVERLAPPED BY OTHER ELECTRICAL TRANSMISSION LINES. APPROPRIATE SAFETY MEASURES TO BE CARRIED OUT.

WORKS ON OR NEAR BARWON WATER ASSETS - CONTRACTOR TO REFER TO BARWON WATER'S CUSTOMER GUIDE FOR WORKS ON OR NEAR BARWON WATER ASSETS AND MAKE APPLICATIONS AS PER BARWON WATER'S REQUIREMENTS.

Rev	Amendments	Approved	Date
0	ISSUED FOR CONSTRUCTION	M.H.	07/04/21
1	ISSUED FOR TENDER	M.H.	31/03/21
2	PIT 216B & TRANSMISSION EASEMENT BUND ADDED	M.H.	23/03/21
3	ISSUED FOR APPROVAL	M.H.	05/03/21



**spiire**  
414 LA TROBE STREET PO BOX 18004 MELBOURNE  
VICTORIA 3007 AUSTRALIA T 01 3 9600 7998  
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**PEET**  
Designed P. CLIFTON  
Authorised M. HOLMES  
Checked J. KOEHLER  
Date 05/03/21

**NEWHAVEN STAGE 13 ROAD AND DRAINAGE FACE PLAN WYNDHAM CITY COUNCIL PEET NO. 1935 PTJ LTD CONSTRUCTION**  
By 304445CR200 0

**PROJECT:**  
Newhaven Estate – Stage 13 (Level 1)

**LOCATION:**  
Tarnett

**CLIENT:**  
BMD Urban

**PROJECT No:**  
1120 0259-1 (S110)

**DATE:**  
14/07/2021

**SITE PLAN SKETCH—NOT TO SCALE**

