

Baptcare Affordable Housing – Keilor Downs



SERVICES ENGINEERING
Hydraulic, Electrical & Fire

Town Planning Report

JOB NO.: 11297
STATUS: Draft
DATE: 17.09.2021
REVISION: 01

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2.0 REPORT SCOPE & INFORMATION

The following Due Diligence Report provides commentary on the proposed services infrastructure requirements for the development of the following types of housing;

- Single Bedroom units– 21 dwellings
- Single Bedroom units – 16 dwellings
- Double Bedroom units – 6 dwellings
- Three Bedroom townhouse – 4 dwellings

The report covers the following Services Infrastructure;

- Electrical Services;
- Hydraulic Services.
- Fire Services.

The following report is based on our investigations and available Authority Services information available at that time.

This report excludes any site stormwater design/requirements.

3.0 ELECTRICAL SERVICES

3.1 Power Supply

Powercor is the electricity network responsible for power supply in this area.

Maximum demand calculation suggests that site would require approximately 280A – 3ph supply. Refer appendix A for maximum demand calculation. The preliminary Authority design advice received indicates that their diversified load will be in the order of ~125kVA.

A kiosk sub-station (7.2m x 7.2m easement) is required for the site with the proposed location acceptable for Powercor to reticulate an incoming HV supply and future outgoing LV street circuit. Confirmation of the current preliminary information is yet to be received from Powercor.

The route of the incoming HV main is required to be located in public/common property with an easement required over the service.

The low voltage Authority reticulation for the proposed development will incorporate and underground reticulation of cabling and services pits located at the title boundary to each lot. Generally, pits are located at corners of each lot, with the design and installation to be undertaken by a certified Powercor designer as part of the public road design.

Electrical meter panels 500x600x200 are proposed to be located on the frontage of each dwelling. Exact location of meter panels to be integrated with architectural design and detailed elevation.

Pole mounted street lighting is proposed to be provided for general lighting of the public road in accordance with the public road lighting requirements. Generally, 4 – 6m high poles are proposed for the public lighting.

Refer preliminary site services drawing (appendix B) for more information.

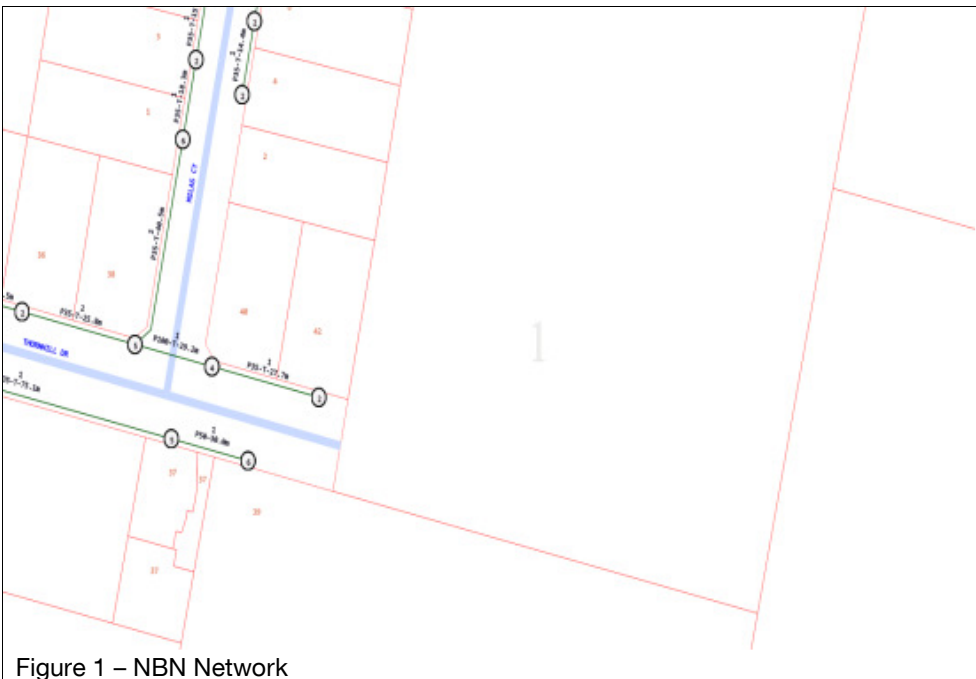
3.2 Communications

NBN provided services to this area and the technology that they use is Hybrid fibre coaxial (HFC) technology. NBN service available at both site of the Thornhill Drive and it is expected to extend HFC cable from one of these pits.

NBN services are proposed to be reticulated in in ground services pits and conduits in accordance with the NBNSCo design requirements. A certified NBNSCo system designer will be required to design and document the reticulation of services through the proposed public road reserve.

Refer preliminary site services drawing (appendix B) for more information.

Refer below figure 1 for NBN network.



4.0 HYDRAULIC SERVICES

4.1 Sewer Reticulation

Greater Western Water is the Water Authority responsible for water and sewer reticulation in this area.

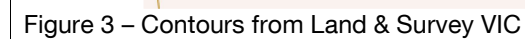
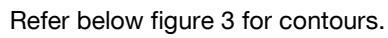
Development would require 150mm sewer connection with minimum fall of 1:80 to the Authority sewer pit and new 150mm branch as shown on preliminary site services drawing. The sewer reticulation for the proposed development will need to be undertaken by a certified Greater Western Water designer with the reticulated services integrated with the public road reserve design.

A dedicated sewer boundary is proposed to be located in the title boundary of each individual lot title, with exact locations for each boundary to be determined through the design process.

Refer below figure 2 for sewer network.

It appears to be land is falling towards north east corner of the site. The sewer needs to run at shallower gradient (1:150) to connect with authority sewer which is noted at an invert level of 81.45. It is recommended to maintain minimum 83.5m through out the site to avoid sewer pump station and rising main for the development. The exact sewer design and drainage invert levels will be determined by the certified drainage designer.

Refer preliminary site services drawing (appendix B) for more information.



4.2 Potable Water Services

An existing DN150mm potable water main currently reticulates along Thornhill Drive and is proposed to be extended to serve the proposed new development. The water reticulation for the proposed development will need to be undertaken by a certified Greater Western Water designer with the reticulated services integrated with the public road reserve design.

Water meter assemblies 300x600x300 are proposed to be located on the property boundary of each dwelling title. Exact location of meter assemblies to be integrated with landscape design and in accordance with the Greater Western Water requirements.

The site would require street hydrants to provide fire service coverage as part of the public road reserve water reticulation design.

4.3 Natural Gas Services

No gas reticulation is proposed to be extended to serve the development.

5.0 BUILDING SERVICES – DWELLINGS

5.1 Electrical Services

All individual townhouses and units are to be provided with local Authority electrical meters in accordance with the Victorian Installation Rules. Meters to be located accessible on the front of each dwelling or within common property.

NBNCo services are proposed to terminate within network Termination Units (NTU's) within each dwelling in accordance with NBNCo requirements.

All internal and external lighting to be provided with energy efficient LED lighting.

Each dwelling is proposed to be provided with the infrastructure for the installation of electric vehicle charging stations in accordance with the 5 Star Greenstar requirements.

5.2 Hydraulic Services

All individual townhouses and units are to be provided with local Authority water Authority meters located on the title boundary of each individual dwelling title. Meter assemblies are to be installed in accordance with Greater Western Water requirements.

All fixtures are proposed to be water efficient fixtures in accordance with the 5 star Greenstar requirements

Domestic hot water is proposed to be provided with residential domestic hot water heat pumps.

5.3 Mechanical Services

All individual townhouses and units are to be provided with reverse cycle heating and cooling systems with condensing units to be located externally at ground level where practical.

Mechanical extract ventilation to be provided to all amenities areas.

6.0 CONCLUSION

In summary, the development is proposed to be provided with the nominated Authority services in accordance with all Australian Standards, Authority regulations and local council requirements.

All dwellings are proposed to be provided individual electricity, communications water and sewer connections and Authority metering in accordance with all Authority requirements.

The development is proposed to be provided with public lighting in accordance with all relevant Australian Standards and public lighting requirements.

Fire services are proposed to be provided to the proposed development in accordance with all planning regulations and Australian Standards.

7.0 APPENDIX A – MAXIMUM DEMAND CALCULATION

CALCULATION

AS3000 (2007) TABLE C1 - MAXIMUM DEMAND SINGLE & MULTIPLE DOMESTIC ELECTRICAL INSTALLATIONS

Job Number:	11126
Job Name:	Baptcare- Keilor
Engineer:	HK
Checked:	
Number Units Total	47
Units per Phase	16
Supply Efficiency	100%
Line Voltage	415
Power Factor	0.8

Unit Load group		Input Value (Number Off/Watts)				Max Demand (A/phase)
A (i)	Lighting except (ii) and load group H below ^{d,e}	25				9.0
A (ii)	Outdoor lighting exceeding a total of 1000 W ^{f,g}	100				0.0
B (i)	Socket-outlets not exceeding 10A ^{e,h}	20				75.0
B (ii)	Where the electrical installation includes one or more 15 A socket-outlets, other than socket-outlets provided to supply electrical equipment set out in groups C, D, E, F, G and L ^{h,i}	0				0.0
B (iii)	Where the electrical installation includes one or more 20 A socket-outlets, other than socket-outlets provided to supply electrical equipment set out in groups C, D, E, F, G and L ^{h,i}	0				0.0
C	Ranges, cooking appliances, laundry equipment or socket-outlets rated at more than 10 A for the connection thereof ^h	Yes	18000			44.8
D	Fixed space heating or airconditioning equipment, saunas or socket-outlets rated at more than 10 A for the connection thereof ^h	Yes	1500			44.8
E	Instantaneous water heaters ^l	No	0			0.0
F	Storage water heaters ^m	Yes	3600			96.0
G	Spa and swimming pool heaters	No	0			0.0
Communal Load group						
H	Communal lighting ^{f,g}	2500				10.4
I	Socket-outs not included in groups J and M below ^{h,i,n} Permanently connected electrical equipment not exceeding 10 A	0				0.0
J	Appliances rated at more than 10 A and socket-outlets for the connection thereof -	0				0.0
	(i) Clothesdryers, water heaters, self-heating washing machines, wash boilers ^h	0				0.0
	(ii) Fixed space heating, airconditioning equipment, saunas ^k	0				0.0
	(iii) Spa and swimming pool heaters	No	0	0	0	0.0
K	Lifts	No	0	0	0	0.0
L	Motors	No	0	0	0	0.0
M	Appliances, including socket-outlets other than those set out in groups A to L above, e.g. pottery kilns, welding machines, radio	No	0			0.0
						0.0
Total Current (A) per Phase (Units)						269.6
Total Current (A) per Phase (Communal)						10.4
Total Current (A) per Phase						280.0
Total Power (kW) per Phase						161.0
Total Power (kVA) per Phase						201.3
*Excludes Commercial Tenancies & Carpark						

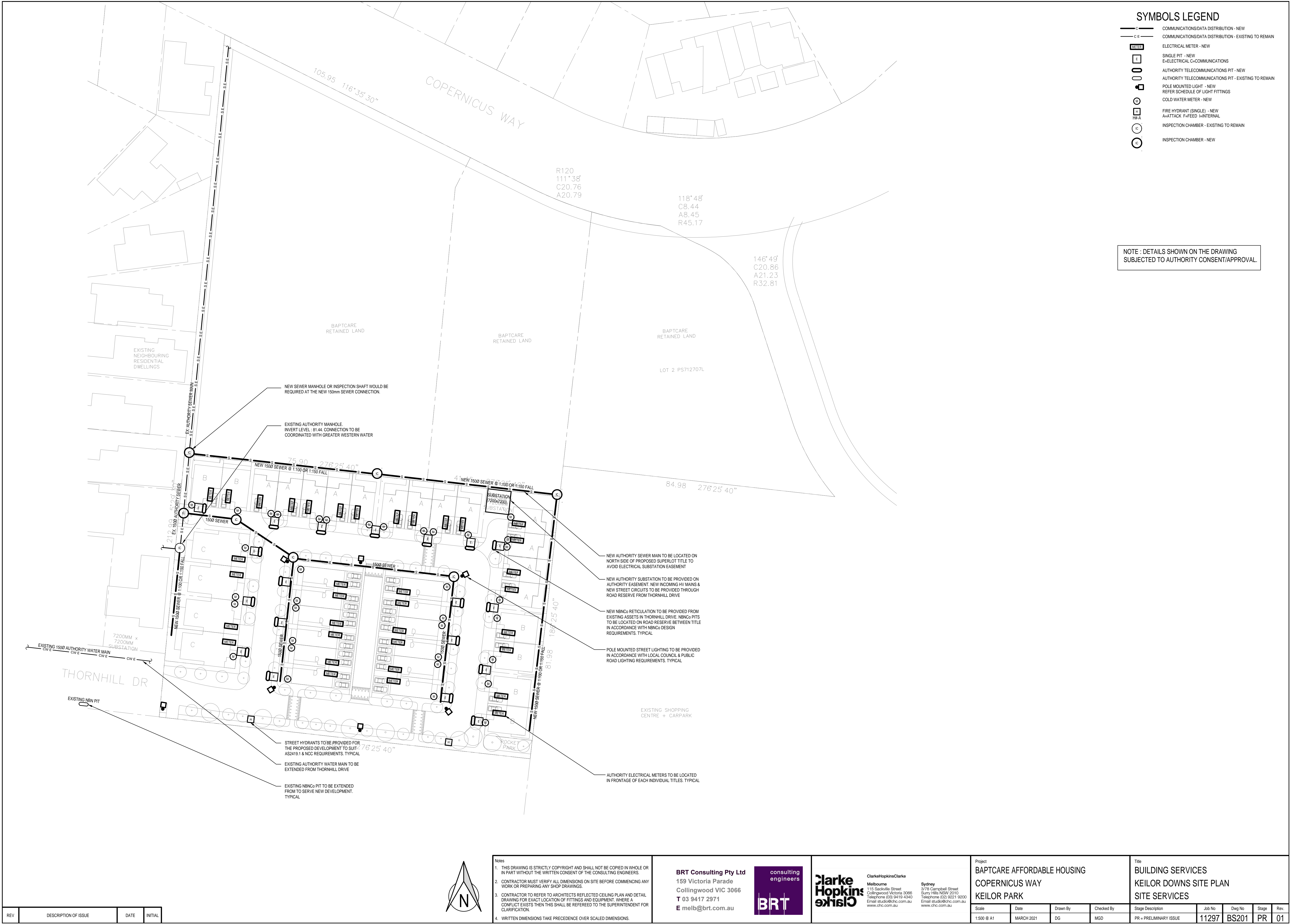
*Excludes Commercial Tenancies & Carparks

8.0 APPENDIX B – PRELIMINARY SERVICES DRAWINGS

SYMBOLS LEGEND

	COMMUNICATIONS/DATA DISTRIBUTION - NEW
	COMMUNICATIONS/DATA DISTRIBUTION - EXISTING TO REMAIN
	ELECTRICAL METER - NEW
	SINGLE PIT - NEW
	E-ELECTRICAL C-COMMUNICATIONS
	AUTHORITY TELECOMMUNICATIONS PIT - NEW
	AUTHORITY TELECOMMUNICATIONS PIT - EXISTING TO REMAIN
	POLE MOUNTED LIGHT - NEW
	REFER SCHEDULE OF LIGHT FITTINGS
	COLD WATER METER - NEW
	FIRE HYDRANT (SINGLE) - NEW
	A=ATTACK F=FEED I=INTERNAL
	INSPECTION CHAMBER - EXISTING TO REMAIN
	INSPECTION CHAMBER - NEW

NOTE : DETAILS SHOWN ON THE DRAWING
SUBJECTED TO AUTHORITY CONSENT/APPROVAL.



- Notes
- THIS DRAWING IS STRICTLY COPYRIGHT AND SHALL NOT BE COPIED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF THE CONSULTING ENGINEERS.
 - CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK OR PREPARING ANY SHOP DRAWINGS.
 - CONTRACTOR TO REFER TO ARCHITECTS REFLECTED CEILING PLAN AND DETAIL DRAWING FOR EXACT LOCATION OF FITTINGS AND EQUIPMENT. WHERE A CONFLICT EXISTS THEN THIS SHALL BE REFERRED TO THE SUPERINTENDENT FOR CLARIFICATION.
 - WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.

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Project
**BAPT CARE AFFORDABLE HOUSING
COPERNICUS WAY
KEILOR PARK**

Title
**BUILDING SERVICES
KEILOR DOWNS SITE PLAN
SITE SERVICES**

Scale	Date	Drawn By	Checked By	Stage Description	Job No	Dwg No	Stage	Rev.
1:500 @ A1	MARCH 2021	DG	MGD	PR - PRELIMINARY ISSUE	11297	BS201	PR	01